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THE RELATION OF SOCIAL LIFE TO SURGICAL DISEASE.

Delivered at the Annual Meeting of the American Surgical Association, Sept. 18, 1888.

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Fellows of the American Surgical Association:—

As the generations fare on, enriched by the results of scientific labor, which pours its tides of opulence into all departments of human thought and industry, there follow through a reactive or reflex influence, certain notable changes, not only on the life and manners of a people, but on their physical and mental diseases. The more advanced a civilization the more complex become the problems which surround it.

While the accumulation of wealth and the multiplication of appliances for human comfort have in the aggregate contributed to the well-being of the race, yet there is reason to fear, that the insatiate and ambitious demands of the masterful leaders in the work of the world, unless conditioned and environed by reasonable safeguards, may acquire their triumphs at the expense of human life. It is a suggestive and solemn thought, that in the victorious march of civilization, thousands of victims must perish beneath her chariot wheels. There really seems to be a perpetual antagonism between man's inventions and discoveries, and the well-being of a no inconsiderable fraction of humanity. He reduces the elastic vapor of water to practical use, and is rewarded by seeing countless numbers of human beings blown into shapeless masses by his rebellious servant. His chemistry creates formidable explosives, capable of dislodging the solid strata of the earth, and yet, in wicked hands, become instruments for consummating such diabolical plots as serve to unsettle the peace of a nation. He rears manufactories fashioning multitudinous fabrics which minister to the comfort and luxury of the race, and while the hands of the fabricator are busy manipulating the materials of these industries, is breathing a death laden air. We send our missionaries to China and the Sandwich Islands

to reclaim their people from the barbarities of heathenism, and then our commerce to ruin their souls and wreck their bodies. There seems, indeed, to be an external conflict between good and evils.

Considerations like these naturally lead to a very inviting field of study, namely, the relation between the material prosperity of a people and the forms of their disease. What I propose, however, in discharging one of the duties belonging to the honorable office to which, by your kind suffrages I have been elected, is very briefly to follow one line of this inquiry, that is,

THE RELATION OF SOCIAL LIFE TO SURGICAL DISEASE.

There is no tyranny more exacting or despotic than that exercised by the conventionalities which govern our living. All stages of life from infancy to old age are under its domination. It dictates the education, the manners, the walk, the dress, the forms of speech, in fine the whole being. Beyond all contradiction the behests of fashion are vastly more influential in governing public conduct, than any arguments drawn from the teachings of structure and function. As a rule, when the conflict is between taste and reason, the victory will be on the side of taste. In nothing is this more forcibly displayed than in the apparel used to protect the body. It is not an agreeable task to peep into the wardrobes or dressing-rooms of our fair countrywomen. I have no special taste for exploring museums of bizarre collections. Indeed, without a key to interpret the curious and ingenious mechanisms for clothing the form divine, such an exploration would be like an archæologist attempting Egyptology ignorant of cuneiform inscriptions. I have, however, some knowledge of human anatomy in its broadest sense, and when I look upon the masterpieces of the human form, whether in marble or on canvas, a Belvedere Apollo, or a Venus de Medici, and contrast these with the dressed-out specimens of modern women, I am forced to admiration; not so much at the amazing ingenuity displayed in concealing the divinely appointed form, as at the plasticity and patient submission of mortal clay under the despotism of a conventional inquisition. Were these processes

of mutilation and abnormality harmless, did the body consist of a mere mass of protoplasm, capable under the application of certain stimuli of assuming, normally, protean shapes, the subject might be passed over with the feelings of a naturalist, but this is not so. These violations of the laws of structure bring with them serious penal inflections, which, did they terminate with the original defender, might be dismissed with a sentiment of pity. But projecting as they do, their baneful consequences to successors, they become proper subjects for criticism.

Let me name a few examples as illustrative of my subject. For some time the profession has been speculating on the causation of nasal and post-nasal catarrh, with its accompanying auditory defects, the growing frequency of which can not have escaped general observation. Doubtless no single agency will explain the presence among us of this unpleasant disease, yet there are facts connected with this affection which to me are very suggestive. I cannot recall an instance in which I have met with the disease among females belonging to the Society of Friends—Dunkards or Menonites. If this, on more extended observation proves to be true, may not the head-dress peculiar to these people be accepted in explanation of their exemption? The bonnet which at one time overshadowed the entire head, as all know, has been gradually shrinking in its dimensions, until it has become a mere shadow of its former self, and offers no protection whatever to the head. As a substitute, I would not insist upon the quaint head-gear of the Friend, though I believe that any modification which will protect this part of the body, will lessen the tendency to catarrhal inflammation of the naso-pharyngeal mucous membrane.

Muscular Restraint.—A legion of physical imperfections arises from muscular restraint. Among these may be mentioned weak ankles, narrow or contracted chests, round shoulders, projecting scapulæ and lateral curvatures of the spine. The foolish concession to appearance, and the unwise partiality of parents for enforced systems of education, the demands of which bear no just proportion to the capacity of the infantile mind, constitute the initial or determining force of these physical imperfections. In many cases the weak ankles of children, characterized by eversion of the feet, thus allowing the superincumbent weight of the body to be transmitted to the latter inside of the proper centre of support, is largely chargeable to the miserable practice of placing on the little ones, long before they are able to walk, boots tightly laced up the limbs some distance above the ankles. The confinement of the flexor and extensor muscles by this constriction, prevents that free play of movement which reacts so favorably on all the elements of an articulation; and that too, at a time when the growing forces

are at full tide, so that when the time arrives for standing and walking, the muscles are unequal to the firm support of the joint. The consequence of this feebleness is soon seen in the turning outwards of the feet, throwing the strain on the internal lateral ligaments, which in turn become elongated through growth, and thus the defect becomes established, but the evil does not terminate here. The calcaneo-cuboid and the astragalo-scaploid ligaments losing the proper support of the tendon of the posterior tibial muscle, under the abnormal tension begins to yield, and to the deformity of eversion is added that of "flat-foot." That the above is not a mere hypothetical explanation of the ankle defects, I have many times verified by finding the threatening symptoms disappear after liberating the imprisoned muscles and subjecting the enfeebled parts to a judicious massage. Under no circumstance as is too often the case, should instrumental apparatus be applied, unless in cases where from neglect, the deformity is thoroughly established and is progressive.

Take another deformity, that of bow leg. On the earliest signs of the unsightly curve, the limb is too often tramelled with irons, and the growth of the muscles arrested, when it is well known that if manual force be systematically applied two or three times a day, the limbs will gradually assume their typical form.

Again, in further illustration of our general text, take as an example a child who for one long, or two short sessions for six days of the week sits over the study desk compelled to assume a position in which from the inclination of the body the shoulders fall forward, the head being supported, most probably, on the elbows and hands. In such a posture the great serrati and pectoralis major and minor muscles are in a state of relaxation, while the erector spinæ and trapezei muscles are in a state of tension. This change in the position of the shoulders gives the scapulæ over, without antagonism or resistance, to the action of the rhomboidei and the lavatores angulæ scapulæ muscles, which acting conjointly cause that projection of the lower angles of the shoulder-blades, which the older anatomists termed "scapulæ alatæ." To all this must be added the very important factor of four to six hours in the school-room and two hours at least of home preparation for the following day's recitations, during which time the respiratory functions having been reduced to a minimum of activity, the muscles of the chest are comparatively passive and æration of the blood tardy. Certainly no combination of conditions could be better devised for forming contracted chests and round shoulders. It is not long before the watchful eye of the mother detects the change in the figure of her child. She will probably discover this and take alarm, even when the pale face, the languid air and the capricious appetite

of the child cause no anxiety; and then comes the second act in the drama of physical deterioration, namely, a resort to shoulder-braces and stays, in order to accomplish that which the muscles should be taught to do without restraint or in-comburance.

Lateral Curvatures.—While it is true that lateral curvatures of the spine depend upon causes both central and peripheral, yet in no small number the deformity is clearly attributable to influences of a social nature. The young column, by reason of the non-union of the epiphysis and diaphyses, and the supple character of its ligaments, is extremely flexible. Whatever, therefore, destroys the muscular equipoise, however inconsiderable the force, if persistently repeated, changes the centre of gravity and develops primary and compensating curves. For six months in the year, any fine morning groups of young children may be seen plodding along our streets with a miniature library of books suspended from one shoulder. To the already preponderating scale of the balance, add the additional factor, a probably badly arranged light, compelling these little *savants* to assume a lateral inclination of the body in order to obtain the necessary illumination of the subjects of the study, and you have all of the conditions necessary for perpetuating the lateral deformity. "Just as the twig is bent, the tree's inclined." As in the case of round shoulders, so here in order to prop up the falling column, instrumental contrivances are immediately called into requisition. The body is encased in a formidable coat of mail, to be followed by muscular atrophy and permanent distortion of one of the otherwise most beautiful pieces of mechanism in the human frame. It is true that in most educational institutions for the young provisions are made for physical culture and these are in some measure antidotal to the evils complained of, but in my judgment do not at all compensate for that free unstudied romp in the open air, untrammelled by the hard and fast rules of calisthenics, so fascinating to the young child. Nor does the evil end here. While the forcing process which is to stimulate the mental powers far beyond the real capacity of the immature and growing brain to receive is in progress another is inaugurated which is to qualify, especially the female child to acquit herself with distinction when the time arrives for entering the great world of society, or as Thomas Brown would style it, "for the frivolous work of polished idleness." The gait and carriage must be reduced to prescribed rules, the voice toned down to a drawl, or trained to move like a mountain torrent. The muscular apparatus of the face must be taught to express, not the spontaneous and natural outflow of feeling which wells up from the magic chamber of the heart, but rather to produce an effect; and so this work of transformation goes on until it culminates in the full-blown society

girl. Is it any wonder that under such a scheme of education, conducted throughout by a studied disregard of both the physical and mental constitution and exercising as it does such tremendous drafts on the nervous system, that the world is becoming filled with a class of flat-breasted, spindle-limbed young women, unfitted for the varied and responsible functions of womanhood, qualifications too, which under a different regimen and directed into proper channels would exert a most potential influence on all the great social and moral problems of the age.

While thus plain spoken on the frivolous methods of living, I do not wish to be understood as being unfriendly to the highest cultivation of the mental and physical powers if conducted on lines in harmony with the organization, nor to any technique which may conduce to personal grace or elegance of manners, so that the manly or womanly personality of the individual be not sacrificed to the Moloch of sentiment and sham. Indeed, indifference to these things is inexcusable in either man or woman, as not only lessening their influence in the world, but in many respects disqualifying them for the highest discharge of the duties of modern life. Valuable as may be the unpolished diamond, yet it is only after the wheel of the lapidary has worn away the dull incrustations that its true brilliancy is revealed and the gem is fitted to adorn the brow or the breast of beauty.

Bodily Constriction.—In the further discussion of my subject, I may next notice the evils of visceral displacement and pressure consequent on abdominal constriction. Whatever may be said in regard to Greek and Roman life, the infinite care which these people displayed in developing and maintaining the very best type of the human form is worthy of admiration. The Ionic "cheton" spoken of by Attic writers and so often represented in the bronzes of Herculaneum, while it would not exactly satisfy the modern idea of dress, was at least free from the charge of interfering with the contour of the human figure. The painters and sculptors of those classic days were reverent students of nature. The delineations were true to life. Their works furnish us with no hour-glass contractions of the human body. The constriction of the waist operates injuriously on both the supra- and infra-diaphragmatic organs. Any force acting on the base of the thorax and preventing the expansion of its walls, concentrates the function of respiration, which should be general, on the apices of the lungs, and hence under these circumstances the movements of breathing are for the most part confined to the summit of the chest. As the initial seat of tuberculosis is located at the upper part of the lungs may not the inordinate work entailed on these parts by constriction have some part in hastening such composite in the female where the predisposition

exists? It is this forcing inwards of the costal border of the thorax which causes the grooves on the anterior surface of the liver so familiar to anatomists. This pressure cannot fail to interfere with the descent of the diaphragm, and with the functions of the gall-bladder and duodenum, and exercises no small degree of influence in favoring the formation of biliary calculi, females being peculiarly prone to such concretions. The extent to which the liver may be damaged by extreme constriction of the waist, is well illustrated by a case quite recently reported in the *British Medical Journal*, in which a considerable portion of the left lobe of the liver had been separated from the right, the two being connected only by a band of connective tissue, and which enabled the operator to remove the detached mass without difficulty. The evil effects of this constriction of the viscera of the abdomen and pelvis, is most strikingly witnessed in the embarrassed portal circulation, in the different uterine displacements, elongation of ligaments, displaced ovaries, tubal inflammations, hæmorrhoids, hernia and other morbid conditions which either prevent or disqualify the woman for the exercise of those functions of maternity, and which in addition, through reflex influences, entails a host of functional disorders reaching into every avenue of the body and invading both the mental and moral constitution of the victim. So prolific have these infirmities become that a new department of surgery has been organized for their special management. To what, if not to social causes, can these morbid changes of structure in the pelvic organs, especially of the uterus and its appendages, be attributed? Why should laceration of the cervix uteri be so common an accident? Labor is a natural process and ought not under ordinary circumstances be attended by lesion of uterine tissue. I can conceive of no agency more likely to induce that muscular degeneration which predisposes to this accident than the modes and methods of modern living, especially among the inhabitants of great cities. In the expression "modern living," much is embraced. It includes culinary pharmacy, over feeding and drinking, insufficient or injudicious exercise, improperly heated apartments, and a disproportion between the hours of exercise and rest. Contrast, if you will, the muscles of the hardy country housewife, who bearing the cares and responsibilities of a dependent family, bustles about the livelong day, in-doors and out-of-doors, eats with a relish her plain and simple fare, repairs at seasonable hours to bed and sleeps the sleep of the beloved, undisturbed by dyspeptic nightmares and rising with the golden dawn resumes the round of domestic toil with a clear head and supple limbs; I say, contrast this type of a class with that of another, the woman born to luxury and ease, whose capricious and exacting taste taxes the art of the professional caterer,

who drags out the morning hours toying with some crazy piece of embroidery or trashy novel, lunches at one, rides out in the afternoon for an airing of two or three hours, returns to a dinner of five or six courses at seven, completes the evening at the opera, the theatre or the assembly, and coming home after midnight, crawls into bed weary and exhausted in body and mind, only to rise with the best hours of the morning gone, for another day of aimless routine life. Can it be doubted that in the first case, with a digestion unimpaired, with the products of textural change consumed by functional activity and eliminated through the proper excretories, the woman should possess a vital resistance and a tone of tissue altogether superior to that of the other, whose habits of living must necessarily favor their faulty metamorphosis?

To these same agencies must be attributed that brood of nervous and hysterical evils for the relief of which the gynecologist, too often I fear, invades the domain of womanhood, around which her whole sexual nature revolves, and which, save only in the direst extremity, should be sacred against all operative intrusion.

Late marriages constitute another social evil, the penal inflictions of which involve both sexes alike. Pride and luxury determine long engagements or deferred proposals. Marriage, it is believed, necessarily involves an establishment, a display, a retinue of servitors. The good old notion of two souls being united in wedlock for the purpose of being mutual helpmates, and patiently together working up from modest beginnings to affluence, seems to be entirely at variance with the modern idea of this relation. In the meantime the young man is betrayed into unlawful sources of gratification, alike destructive to moral and physical purity, the pollution of which incontinence is often subsequently communicated and perpetuated to wife and offspring. I would not dare to say how many cases of this nature have been entrusted to my professional confidence, though I doubt not my experience does not differ from that of many of my professional brethren whom I now address. It is under such circumstances that many of those infective inflammations of the Fallopian tubes, as salpingitis and pyo-salpinx, arise and which entail the most serious deterioration of health.

The Foot and the Shoe.—It may be thought by some persons that the subject of the foot and the shoe is not of sufficient dignity to appear in a public address. The Romans and the Greeks thought differently. The literature of both peoples is full of references to the shoe worn by both sexes. So important, indeed, are the feet to the well-being of the body, that whatever impairs their usefulness, either for support or locomotion, becomes a positive calamity. Nothing can be more unlike the human foot than the modern

shoe. Let any one leave the impress of his or her foot in the wet sand of the sea-shore and then place alongside of the imprint a fashionable shoe; that the two were ever intended for each other would scarcely strike a child of the forests. The North American Indian entertains juster notions about clothing this portion of his body than does the civilized denizen of New York or Philadelphia. Compare the moccasin with the shoe of the city belle. Compare the *ζαρδανιόν* or the *πεςδυχά* of Pollux or of Aristophanes with the same and we shall see that the savage and the polished Greek alike understood the value of sound feet in the race of life. It is the imperfect adaptation of the shoe to the foot which constitutes the fruitful source of tired ankles, corns, bunions, overlapping of the toes and in-growing nails. Some idea may be formed of the magnitude of the evil from the fact that of 800 patients under the care of a prominent chiropodist of Philadelphia, the great majority of the defects were entirely attributable to the high heels and the contracted toes of the shoes. Especially do these physical encumbrances arising from a blind submission to social laws operate disadvantageously to our fair women at the beginning of the new dispensation requiring both muscles and brains, and when her friends propose to sweep away all the old traditions and claim for her the earth with all its masculine employments.

Games and amusements which in themselves are proper and praiseworthy too often become developed into a craze, working both moral and physical mischief. Professor Leuf, himself a professional in the national game of base-ball, has described the pitcher's arm, a condition of over-tuned function and one in which all the anatomical elements of the upper arm are involved. There is also the tennis-arm and the swollen, supersensitive prostate of the bicyclist, both due to the abuse of popular amusements.

Defects of refraction or visual defects constitute another class of affections fairly attributable in many instances to social influences. The number of children which may be seen in our streets any day wearing glasses has become a matter of common observation. It is far from being probable that the most exquisite piece of mechanism, the human eye, came from the Divine Artificer imperfect. Because eyes are young, it does not follow that they are thereby better fitted to sustain prolonged use. Just the reverse is true, and it is high time that parents and educators begin to recognize the fact. The power of the eyes for continued use, like that of other organs of the body, is one of gradation. It moves in the general procession and strengthens with the advance in life until development has attained to its zenith. Not only so but, the eye being a part of the body, it must suffer or rejoice through the operation of general causes. A bone may have its normal curves changed, a tendon may slip from its ap-

pointed groove, or a blood-vessel may be destroyed, and yet very little disability be realized; but the eye is made up of such extremely delicate structures and acts according to such fixed physical laws, that not the slightest alteration of a curve or the mobility or density of its media can occur without great vitiation of function. To exact, therefore, long hours of study from children of a tender age, involves a degree of functional strain altogether disproportionate to the structural resources of the organ and, by disturbing the orderly processes of nutrition, gives rise to hypermetropia, asthenopia, astigmatism and its companion headache. That the picture is not too highly colored or the causation overstrained, we have only to contrast the children born and reared in those portions of the country not too much dominated by the methods of modern civilization, and who rarely demand a resort to artificial aids to provide for abnormalities of vision. The only remedy for the evil where infantile scholarship is insisted upon is the Kindergarten or object system, the most natural and effective method of impressing the young mind.

Renal Disease.—Is there any reasonable explanation drawn from sources of a social nature for the great frequency of those renal disorders which come more particularly under the care of the surgeon as crystalline deposits and calculi? For maintaining the general health at the highest physiological standard, a proper quality of food and the proper disposal of tissue waste are essential conditions. Along with wealth and luxury come the abuses of the table. Americans are fast becoming a nation of dyspeptics. Our country is so rich in the products of every zone that nowhere else in the world can you find such a variety of foods, animal and vegetable. These foods, manipulated in a thousand ways by the subtle art of the professional cook, almost necessarily betray one into excess, and also create the desire for wines and other alcoholic beverages to aid the stomach in disposing of its plethoric supply. In great cities, which furnish relatively the largest number of cases of renal disease, affecting preëminently the mercantile and sedentary classes, we find just the conditions favorable to their development. The competitions of trade keep the merchant always at white heat. Time is golden, and the street-car and other means of conveyance annihilate distance and the ride is substituted for the needful walk. A hasty lunch at the most convenient restaurant satisfies the inner man until the business of the day is closed, when, weary and worn, he is driven to his home to partake of a course dinner, the balance of the evening to be spent on the lounge with the evening paper or the latest periodical. To the literary man the fascinations of the study and the library charm him away with their siren voices from the fields and the highways, until bodily exercise grows

distasteful and repugnant. In the meantime there has been no provision made for the waste or tissue metamorphoses of the body through that great agency, exercise. These accumulate in the blood, the internal eliminating organs, of which the kidneys are chief, are overtaxed, and then follow the evils of malassimilation and of excretion, in the form of urates and oxalates, often resulting in the formation of calculi.

In conclusion, may we ever hope for a time when the race will realize that these bodies which we wear, which God has so highly honored by his own incarnation, are sacred temples to be kept in harmony with recognized physical laws, and not to be made instruments of mere animal gratification.

ORIGINAL ARTICLES.

RENAL TENESMUS:

A RESULT OF CHRONIC CYSTITIS AND URETERITIS, SUCCESSFUL TREATMENT BY KOLPO-URETERO-CYSTOTOMY AND INTRAVAGINAL DRAINAGE COMBINED WITH ELEVATION AND SUPPORT OF THE UTERUS AND OVARIES.

Read in the Section on Gynecology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888

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I read before the New York State Medical Association, Sept. 27, 1887, a paper entitled, "Chronic Pyelitis; Successful Treatment by Kolpo-uretero-cystotomy, Irrigation of the Pelvis of the Kidney, and Intravaginal Drainage." In this communication I showed that the vesical orifice of one of the ureters could be exposed by making an opening at the ureteral angle of the trigone of the bladder on the affected side, and that disease of the renal pelvis could be treated and cured by local means. In order to catheterize the ureter and pelvis of the kidney, the anterior wall of the vagina is exposed, in the supported knee-elbow or left lateral position, by the use of my dilating speculum and perineal elevator; the upper border of the artificial opening is then elevated by means of a tenaculum, and the vesical mucous membrane containing the orifice of the ureter is thus rolled out into the vagina. In this way we are enabled to guide a flexible catheter into the ureter, and thus to avoid all injurious probing of the bladder. By injecting warm water, or a solution of bichloride of mercury (1-20,000), through the catheter with a small syringe, the pelvis of the kidney is gradually filled. Distension of the organ gives rise to a peculiar pain, which serves as a guide as to the quantity of fluid which should be injected. When the water is allowed to escape, it brings

with it pus, blood, and calcareous detritus, if these irritating substances are present. The injection should be repeated every two or three days or oftener, according to circumstances, and the irrigation continued until the washings are free from sediment.

In the paper referred to I further showed the effect of this method of treatment upon obstruction of the urethra and cystitis, which are commonly associated with the pyelitis. The opening in the bladder, by affording physiological rest and drainage of this organ and the urethra, leads to the subsidence of the inflammation or irritability of the mucous membrane of both structures, and to the atrophy of the thickened muscular walls. The bladder being thus kept continually empty through intravaginal drainage, offers no resistance to the entrance of the urine as it comes from the ureters, and there is no longer a tendency to its reflux toward the kidney during expulsive efforts of the bladder. Physiological rest and drainage of the ureters and pelvis of the kidneys, as well as of the bladder and urethra, consequently follow the operation. I also described several forms of intravaginal and vulvo-vaginal drainage instruments, which, by collecting the urine in a satisfactory manner and making the patient comfortable, free, in great part, the operation from its chief objections; to wit, the presence of accumulated urine in the bladder and vagina, and dribbling from the vulva.

At this time I had treated two cases of pyelitis, both of which were cured. I have since done kolpo-cystotomy and kolpo-uretero-cystotomy eight times.² Having thus a ready means of access to the bladder, ureters, and pelvis of the kidneys, I have learned, by observation and experiment upon the living subject, some new and important facts concerning the diseases of the upper urinary organs in women.

Anatomy and Pathology.—In presenting the results of these investigations, I have selected as my subject "Renal Tenesmus," a frequent result of chronic cystitis and ureteritis, in contradistinction to pyelitis, the usual result of urethrocele, cystitis, and ureteritis. It is the most characteristic symptom of the class of cases of which I wish to speak. I have chosen this symptom rather than a pathological condition, as I wish to make it prominent, because it is the first and frequently the only indication of the gradual extension of urethral and vesical disease to the ureters and pelvis of the kidneys. From the peculiarity and wide range of the group of symptoms embodied in the use of the term renal

¹ Transactions New York Medical Association, vol. iv., 1887. American Journal of the Medical Sciences, March and April, 1888.

² I have now performed thirteen operations in all, combined with intravaginal drainage—two of kolpo-cystotomy, and eleven of kolpo-uretero-cystotomy. Two of these operations were for urethrocele and cystitis, one was for left pyo-nephrosis with dilatation of the ureter, one for left pyelitis with sacculization of the ureter, three were for pyelitis with dilatation of the ureter, and five for renal tenesmus, without dilatation of the ureters, or pelvis of the kidneys.

tenesmus, it is liable to be confounded with pyelitis, with which it is closely allied. I mean to designate by this term a distinct manifestation of morbid irritability, without pathological evidences of inflammation other than that of pain. The distinction between it and pyelitis, resulting, to a certain extent, from like causes, cannot, I conceive, be too sharply drawn.

Here, as in other parts of the body, the progress of disease is inward—from organs communicating directly with the exterior of the body, and exposed to injurious influences from without to those in more sheltered positions in the interior. It is true that an abnormal condition of the urine sometimes leads to the formation of renal calculi, or the ureters and pelves of the kidneys may be pressed upon by abdominal tumors, be the seat of a new growth, or be implicated in disease of neighboring organs, and in these conditions renal tenesmus may occur as one of the symptoms; but as I have approached its study from the urethra and bladder, I will at present consider it only in its relations to disease of the upper urinary passages following affections of the urethra and bladder.

That an inflammation of the mucous membrane of the urethra and bladder should extend to the vesical extremity of one or both ureters is not surprising. The mucous membrane lining the ureters is continuous with that of the bladder, and the ducts traverse the vesical wall for an inch and a half. It is therefore probable that in an acute cystitis, preceded or not by urethritis, the vesical part of the ureters rarely escapes. As a rule, when the inflammation of the bladder subsides the ureteral mucous membrane returns to a normal condition. But if urethrocele should co-exist, or the walls of the bladder should become hypertrophied, or there should be distortion of a ureter arising from the pressure upon it of a displaced uterus or ovary, or both, or of pelvic growths of any kind; why, then, the disease of this portion of the duct is not only liable to continue, but it will sooner or later extend to the pelvis of one or both kidneys, under the form of pyelitis, or of renal tenesmus.

Cystitis more or less localized in the base of the bladder, complicated by ureteritis, is a more obscure but highly interesting condition. The cystitis commences as a local or general inflammation, and afterward becomes confined to one locality in consequence of the retention of residual urine due to sacculation of this part of the bladder. Pouches in the base of the bladder may result from irregular thickening of its muscular coat or from distortion of the vesico-vaginal septum, in consequence of the presence of cicatricial bands and contractions in the vagina, or, as I have more frequently observed of late, from fixation of the uterus in an abnormal position. There is frequently, in these latter cases, lateral

displacement of the uterus, and the cervix is drawn upward and outward toward one or the other side of the pelvis, carrying the vesical wall with it, and becoming there more or less fixed. In this way is produced a funnel-shaped pouch, the apex of which corresponds to the attachment of the cervix to the bladder. A fold in the vesical wall also occurs in cases of backward displacements of the uterus, especially in well-marked retroflexions with inclination of the fundus to one or the other side of the pelvis. The bladder is attached to the anterior aspect of the cervix uteri along a line about an inch in length. When the fundus uteri sinks into Douglass' cul-de-sac and the utero-vesical pouch of the peritoneum is thus effaced, the highest part of the attachment of the uterus to the bladder is drawn backward, the lowest is displaced forward by the cervix, and the superior wall of the bladder approaches the base. In this way, instead of the regular and rounded form of the cavity of the bladder, at this point is produced a more or less acute angle, the apex of which corresponds to the highest point of the utero-vesical attachment, and consequently the deepest and narrowest part, to the side toward which the uterus is inclined. Frequently, these folds and distortions of the vesical walls are very distinct, and the artificial opening in the bladder, the result of the operation of kolpo-uretero-cystotomy, affords an excellent opportunity for the study of the mechanism of their production. One of the ureters may empty into a pouch produced in some one of these ways, and thus the inflammation may extend to its lining membrane. The distortion of the bladder at this part also favors the reflux of urine into the duct during expulsive efforts. Fixation of the uterus also, even when the organ is in a normal position, by interfering with the mobility of the bladder, prevents its easy and symmetrical dilatation by the urine and the complete evacuation of its contents. These influences must be studied all the more closely, because, although great irritability of the bladder and renal tenesmus exist, sometimes there is no pus in the urine, and at others only a very small amount. Exacerbations, however, occur, especially during the menstrual periods, when the inflammation extends to the entire vesical mucous membrane and the urine contains large quantities of pus.

Ureteritis may remain localized in the vesical portion of the ureter, or the inflammation, from an increasing urethral, vesical, or uterine lesion, may extend upward and involve the pelves of the kidneys. In my experience this extension is either preceded or accompanied by dilatation of the ducts. When I have opened the bladder and exposed the ureter, in those cases where the inflammation was confined to its lower part, the lumen of the duct was contracted in consequence

of thickening of its coats or of morbid irritability in its entire extent, associated with uterine and ovarian displacements, which there is reason to believe are almost, if not always, present under such circumstances. In the cases of pyelitis which I have treated, on the other hand, associated also with uterine and ovarian displacements, the ureter was considerably dilated. The cause of the dilatation of the ureter and at the same time the extension of the inflammation is, as I believe, the reflux of the urine bearing septic material from the bladder, arising mainly from the increase of obstruction in the urethra to the outflow of the urine. Thickening and narrowing of the urethra, distinguishing features of urethrocele, by necessitating forcible efforts of the bladder to expel its contents, lead to concentric hypertrophy of the muscular coat and increase the strain upon the ureters, thus causing pyelitis. Partial or general thickening of the muscular fibres of both these structures, the result of overaction in irritable bladders arising from recurrent attacks of cystitis, produces the same effect by increasing the power of the contractions of the bladder. At the same time these contractions occur with greater frequency and longer duration, thus leading to renal tenesmus, as I have observed it in connection with the various forms of uterine and ovarian displacements just described.

Classification.—Now, from the foregoing anatomical and pathological considerations, the chronic inflammatory affections of the female urinary passages may properly be divided into four classes, namely: 1, Urethritis; 2, cystitis; 3, ureteritis; 4, pyelitis. The progress of development is from without inward, and the order of occurrence, as I believe, is the one enumerated.

Urethrocele and Cystitis.—The following extract from a paper³ I read before the Medical Society of the State of New York, will show the scope of my views upon urethritis and cystitis at that date, and will serve at the same time to connect these views with those I at present entertain upon the pathology and treatment of the chronic inflammatory diseases of the upper urinary passages belonging to the third and fourth classes of our division, namely, ureteritis and pyelitis to be referred to again:

"The starting-point of urethral and vesical lesions in the female is to be sought in the lower half of the urethra, closely related in front with the triangular ligament and blending behind with a spongy erectile tissue of the vagina.

"The calibre of the urethra may be transiently narrowed by congestion of its mucous lining, or permanently narrowed by infiltration of coagulable lymph into the underlying cellulo-elastic tissue, which constitutes properly the so-called

organic stricture, as in the male, and which, however seldom met with, is liable to the same sequences.

"Infiltration into the spongy erectile tissue outside the urethra, by plastic lymph, is, I believe, by far the most common beginning of the morbid process, whatever be the cause that produces it. This interrupts the stream of urine, either by encroaching on the calibre of the urethra, or by deflecting it beneath the triangular ligament, both cases being attended with more or less dilatation above.

"The next step in sequence is increased functional activity of the urethral muscular coat in overcoming the obstruction to the flow of urine. The result upon its structure is hypertrophy, and this will be of the eccentric type, thickening the urethral walls, while enlarging the calibre. Hence the ease with which large catheters of a proper curve pass at all stages of the disease. False and true hypertrophy here coexist. The true hypertrophy increases *pari passu* with the muscular contraction, and is followed by still greater distortion of the canal at an angle more and more acute as it turns the triangular ligament, and with corresponding contraction of its walls at that point. This mechanical impediment below coincides with the increased weight and volume of the stream of urine above, to put the walls of the urethra on the stretch in the upper part of its course.

"Thus is gradually formed the urinous tumor, which drags down in front the adjacent vaginal wall, appearing as a prolapsus between the nymphæ, and filling up the ostium vaginae.

"The looser attachments of the urethra to the vagina in the upper part of its course facilitates this result. Such is the condition of the parts to which I apply the term *urethrocele*. Often confounded with cystocele, it is really distinct.

"The arrest and retention of but a few drops of urine, at first, goes on until this may amount to a teaspoonful or more. It is then decomposed in this pocket, becomes alkaline, and by its irritation provokes congestion of the urethral mucous membrane. This congestion, extending to the vesicle trigone above, will bring white glairy mucus into the urine with vesical and rectal tenesmus. Causes favoring this extension are errors in diet, overexertion, and excessive coition. Acute cystitis resulting, first complicates the urethrocele, and is more or less decided according to the gravity of its determining cause. After a few days the active congestion disappears or subsides, with the vesical symptoms, leaving the urethrocele persistent. A few days, or weeks, or months afterward, similar provoking causes, even slighter than at first, will reproduce the congestion, while extending its area, with a corresponding increase of the severity of all the symptoms. . . . Finally, chronic cystitis overshadows the primitive urethrocele,

³ Urethrocele, Catarrh, and Ulceration of the Bladder in Females. See Transactions for 1871.

although this still contributes to exacerbate the long and frightful train of evils.

"The vesical mucous membrane seems to possess almost boundless susceptibilities of irritation, and the higher this ranges, or the greater the area congested by contact with ammoniacal urine, the more is the subjacent muscular coat excited to contractions of abnormal force and frequency. Hence hypertrophy, increased congestion, blindly seeking relief by increased mucous secretion, and more active fermentation of the urine, deposits of its ammonical magnesian phosphate, sometimes hæmorrhage into the bladder, blood extravasated into the submucous cellular tissue, or abscesses formed there.

"This hypertrophy of the concentric type, although apparently slight in the mucous coat, is more serious in the muscular coat, whose efforts to overcome the urethral impediment and rid the bladder of its acrid contents, keep it growing until it reaches an inch or more in thickness. Autopsies reveal upon its inner surface fascicles of muscle like the interior of the right ventricle of the heart. Its color is deepened by the increase of venous blood in its retarded circulation, and its consistence softened by the same cause. The circular and spiral muscular fibres of the upper urethra are also hypertrophied and overcome the former dilatation of the canal, thus converting the eccentric into concentric hypertrophy of the urethra, which has become firmer to the touch, while its urinous tumor is less defined.

"From the earliest period of vesical hypertrophy, the congestion of the mucous membrane occasions thickening with an œdematous feeling in the bas-fond, and the contraction of its pliant walls under this irritation is even greater than is possible after they have been straightened out and expanded by progressive thickening. The vesical cavity, moreover, is reduced by the pressure of the anteverted womb upon its superior fundus, which at this early stage gives it a somewhat cylindrical shape.

"On the vagina, the effects of a hypertrophied bladder are seen in the increased firmness of the vesico-vaginal septum, and the congestion and hyperæsthesia of its mucous membrane.

"Ulceration initiates the destructive stage of subacute inflammation or chronic catarrh of the bladder. It will be superinduced by the excessive hyperæmia of small or large patches of membrane, especially at the trigone and bas-fond, and by extravasations of blood into the submucous cellular tissue, caused probably by rupture of minute veins at the time of strong muscular contractions. In either event the mobility or pliability of the mucous membrane is lessened or destroyed by the inflammation which has reached its acme, and which now terminates in sloughing of the membrane (gangrene) perhaps to a very limited extent, or by an abscess opening through it into the blad-

der. It is also to be considered that the mucous membrane, rendered friable by previous inflammation, and thrown into irregular folds, may tear when it can no longer stretch under the powerful grasp of the hypertrophied muscular coat. This accident will occur the more readily on account of the anteverted position of the womb, which, I believe, always exists, and the pressure of which may explain the greater proneness to extensive ulceration of the female bladder, as averred by our morbid anatomists."

Treatment.—In further consideration of the methods and objects of physiological rest, I am led to regard all four of the inflammatory diseases of the urethra, bladder, uterers, and kidneys named as so many stages of the same pathological process. In short, if it were possible to cure the initial acute inflammatory lesions of the urethra and bladder, which rapidly become chronic, before the more internal organs are involved, the diseases of the ureters and pelves of the kidneys, thus arising from continuity of structure, might be almost, if not entirely, avoided. Hence the great importance of recognizing early commencing urethrocele and cystitis, and treating them promptly, for, if neglected long, the upper urinary passages will surely suffer sooner or later in the order of sequences previously indicated.

Kolpo-cystotomy.—Kolpo-cystotomy, to secure physiological rest of the urethra and bladder, is undoubtedly the operation indicated for the relief of cystitis coexisting with urethrocele when the ordinary remedies at our disposal have failed; not dilatation of the urethra, nor an artificial opening between the canal and the vagina, expedients at best of questionable utility.

In the early stage of urethrocele, in which there is sacculation of the canal and retention of urine, I advocated on theoretical grounds, in the paper just quoted, the establishment of an opening into the canal from the vagina, a procedure which I called "tapping of the urethra;" but I soon saw that the practice recommended possessed no real merit, for the reason that the relief of the urethra afforded by such an expedient would confer little or no immunity upon the bladder against the extension of the inflammatory process to its cavity, and I therefore gave up the idea. Dr. T. A. Emmett proposed a similar operation on the urethra, several years later, which he called "button-holing of the urethra," but from what I have seen of the bad results of this procedure in cases which had been subjected to it by his followers, I would not be inclined to recommend it, for the reason that, when drainage from either the urethra or bladder or both is required, it should be established through an opening at a favorable point in the vesico-vaginal septum, where the opening afterward can be more easily closed, and injury of the functions of the urethra be entirely avoided. A large opening made here gives relief to both

urethra and bladder by putting them in a state of physiological rest, and while they are being thus cured the ureters and pelves of the kidneys are guarded against further strain and the risk of commencing disease.

The practice of making an opening into the bladder as a means of treating cystitis is itself of comparatively recent origin, but it is recognized generally by the profession as of great practical value. It has, however, been restricted in its employment for the want of suitable forms of intravaginal drainage, by which alone the beneficial and legitimate results of the procedure can generally be obtained. I was the first in this country, as I believe, to treat successfully chronic cystitis by kolpo-cystotomy, which I did in my private hospital in New Orleans, in 1861. My first case was one of ulceration and concentric hypertrophy of the bladder coupled with urethrocele. The mucous coat of the bladder was thickened and redundant, and had a low grade of vitality. It was exposed to great tension on account of the violent and irregular contractions of the muscular coat. From its friable condition, no doubt, it readily became fissured and ulcerated, as was shown by the very minute disintegrated particles discharged through the urethra, which I recognized from time to time with the unaided eye. The same pathology and mechanism of the walls of the bladder will serve to explain the occurrence of gangrene and perforation, not only of the mucous but of the muscular coat as well, in bad forms of recurrent cystitis, a case of which I could here cite if time permitted.

The very large opening, nearly the size of a silver dollar, which I finally made in the vesico-vaginal septum of my case referred to, afforded full and free vesical drainage, and within one year all the diseased structures were completely cured by it, and the artificial fistula closed. The cause of failure to get the good effects of this procedure, in the hands of most surgeons who have employed it since, I am convinced, is because they do not make a sufficiently large opening in the bladder.

To illustrate some of the important objections to the latter practice I will cite here a typical case—Mrs. S—, of Ohio, aged 32, who recently came under my care—in which the initial stages of urethrocele and cystitis were completed after six years, with the development, as is believed, of ureteritis in the right side in the regular order of sequences. The operation of kolpo-cystotomy was performed by one of the ablest gynecologists of New York, but, notwithstanding his acknowledged skill, the disease was only ameliorated for a time, resulting no doubt from the smallness of the opening he made and his failure to secure perfect vesical drainage. The patient, in spite of his kolpo-cystotomy, after five years of further development of sequences (April 11, 1888) was ad-

mitted into my service in the Woman's Hospital, presenting all the terrible consequences of renewed and perpetuated sufferings, with blighted hopes and ceaseless dread of death from unknown causes. I found the fistula made for drainage five years before, situated a little to the right of the median line and very near the cervix uteri, a mere longitudinal slit through the thickened and contracted vesico-vaginal septum. It would about admit a No. 10 bougie, and through it protruded a small knuckle of the thickened vesical mucous membrane. The urethra had gone through all the stages of urethrocele, from an attack of urethritis occurring four days after marriage, and the bladder was in a state of concentric hypertrophy with a retaining capacity not exceeding three ounces of water. The patient says that she did not experience any real benefit from the operation she underwent until about six months afterward, when she got out of bed and began to walk about, attributed properly by her to a free escape of the urine, in obedience, of course, of the law of gravity. The most of the symptoms in her right side, from this time on continued to improve. But this amelioration of her sufferings was only of short duration. Pains soon began in the left groin and lumbar region, and they radiated down the thigh to the knee and foot, and came on in paroxysms not unlike those of renal colic. At the end of three years (two before admission into the hospital), though relieved almost entirely of her sufferings in the right side, the paroxysms of pain in the left had already become more frequent and severe in character, which were often followed by free discharges with the urine of thick and offensive pus. This condition of things continued to grow worse and worse until she entered the hospital. She had a bad form of retroflexion and fixation of the uterus. Notwithstanding her varied sufferings of eleven years' standing, greatly aggravated no doubt from the last-named cause, I found her to all appearances in a state of robust health. But she was nervous and unable to sleep, results no doubt of the increased frequency and severity of the pains in her urethra, bladder, and left side, combined with the irritating effects of the constantly escaping ammoniacal urine. The treatment I proposed in the case was the correction of the displaced uterus and the successful establishment of intravaginal drainage, two most essential steps, I conceived, and without which I did not think it possible that any good could be accomplished toward the relief of the sufferings described.

Here the pathology and obstacles to perfect vesical drainage were not unlike those usually found in certain forms of chronic cystitis in the male subject, resulting from old strictures of the urethra, and enlargements of the prostate gland. These two diseases, as is well known, bear a direct relation to dilatation of the ureters and surgical

kidneys, which are usually rapid and certain in their developments; but they are no less constant and uniform in the production of their sequences than were found to exist in the case just cited, resulting from urethrocele and cystitis.

June 30th. Progress proved necessarily slow in my first efforts to restore the displaced uterus and establish satisfactory drainage, owing to the greater immobility of the organ, and consequently the greater angle to be overcome in the adjustment of my utero-vesical support than I supposed in the outset of the treatment. Notwithstanding these obstacles, however, and the restiveness of the patient, the gradual improvement of the uterus and the daily improved state of

Matters thus we found that the old closure of it of the vesical mucous membrane, were obstacles even more grave than those just mentioned. These obstacles, to my mind, accounted for the former persistency of the pains in the right side, and afterward the renal colic-like pains in the left. A more minute and careful examination at the anatomy of the vesico-vesical orifice of the left ureter, upon these points. Here I found the area of the structure contracted down to one-fourth at least of its original dimensions. It was thickened in about the same

exquisitely sensitive under pressure from this further study of the parts, the incompleteness of the relief—

tomy five years before—the hypertrophy of the muscular coat of the bladder had itself not only gone on increasing in the locality indicated, but that the original cystitis had been followed here by ulceration of its mucous coat as well, thus causing in this way abnormal relations of the parts, and mechanical obstruction to the outflow of the urine from the corresponding ureteral orifice. I, therefore, decided to perform left kolpo-ureterocystotomy, in order to give a direct outlet to the implicated ureter, which I did in the supported knee-elbow position, on April 27th, in the presence of several physicians and the house-staff of the hospital. I made as large an opening as the permitted limits of the diseased structures would permit, by using a double-pointed probe between the old and new openings, the breadth of the incision being I found the thickness of the muscular coat of the bladder, and an artery in the upper border of the opening, the exposed blood almost equal to that of the ureter. Only by the quick application of a long pair of curved scissors was the patient saved from excessive loss of blood. The orifice of the imprisoned ureter could not now be discovered, nor could the morbid changes of the muscular and mucous coats of the bladder around the newly-made opening be carefully examined prior to the free opening of the bladder. Suffice it to the fistula a

moistened in a 20 per cent. solution of subsulphate of iron, and controlled effectually the hemorrhage. In this way I put the patient in the best possible condition for renewed progress in treatment by intravaginal drainage, combined with elevation and support of the uterus. As might have been expected from a fresh wound in the parts, there was for eight or ten days considerable increase in discomfort of the patient, arising mainly from flooding of its raw edges with alkaline urine. But, nevertheless, the cavity of the bladder under the new order of things soon began to enlarge, and the thickness of the vesico-vaginal septum to perceptibly diminish, thus showing that the mucous coat of the bladder had not undergone ulceration. It was not until June 3d, thirty-six days after the operation, could I find the affected ureteral orifice, and explore the tube up to the pelvis of the kidney. This I did first with a delicate probe for a few inches, and then with a French catheter, No. 8. The result was the escape through the catheter of 10 drachms of pus and urine, white, thick, and cloudy, from a point not exceeding one inch and a half up the ureter. The pelvis of the kidney and ureter were then irrigated with a solution of bichloride of mercury, 1-20,000. Again, June 5th, two ounces of a similar fluid were drawn off from a point about the same height in the ureter, containing a larger amount of pus and albumen with acid reaction, and specific gravity of 1.019. This exploration showed that when the eye of the catheter was carried into the pelvis of the kidney and irrigation commenced, it had to be withdrawn three inches from the kidney before the fluid would begin to run through it, thus proving that the sacculation was not in the pelvis, but low down in the ureter. Still again, on June 8th, with the same precautions of introducing and withdrawing the catheter through and back to the dilated portion of the ureter, three ounces of fluid of the same character were taken away, and irrigation made. The fluid drawn off this time was acid, contained pus, epithelia, and some albumen, but no casts or crystals. The catheter, now left in the ureter five hours, showed that the secreting capacity of the left kidney was equal to, if not greater than, that of the right. The temperature next day, accompanied by nausea and vomiting, rose to 103.5° F., but it gradually came down, and the irrigation was resumed, though at longer intervals. The improvement of the parts was slow but progressive to the date of this note, when the patient left the hospital to return home to recuperate her strength for future treatment, when the hospital opens in the autumn.

Remarks.—The facts brought out in this foot-note, scarcely need I say, all tend to prove the correctness of my statement in the outset, namely, that the opening in the bladder made by the surgeon who first treated the case was too small, and that to his imperfect vesical drainage is properly referred the continued development and pro-

From all this, therefore, it will be seen that I advocate and recommend for the successful treatment of urethrocele and chronic cystitis, alone or jointly, an opening in the vesico-vaginal septum between the orifices of the ureters, to secure beyond question physiological rest—the opening to be the size of a silver half-dollar to that, even, of a silver dollar, according to the advanced stage of the disease and the time it is desired to keep the structures at rest. This is to be coupled now, of course, with my system of intravaginal drainage, to protect the raw edges of the wound and the vaginal tract from the evil effects of the urine and to guard the patient against stillitidism. The distinguishing features of my procedure I have now clearly set forth; they are, I know, in contravention of the generally accepted views of gynecologists.

(To be concluded.)

THE ANTIPYRETIC, AND THE ABORTIVE TREATMENT OF TYPHOID AND REMITTENT FEVERS.

Read before the Wisconsin Medical Society, June, 1888.

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The search for specifics is as old as the history of medicine. From the time of Hippocrates down to the present, the highest aim of the physician has been to shorten disease by as many days as possible; to arrest, if possible, the law of its natural evolution, or so amend it as to rob it of its chief inflictions, if not its final penalty. Through all the ages it has been a hunt in the dark, the chances of success and failure being as one to infinity. Hence the alluring pursuit of the older chemists after the panacea—some substance or compound which was to fit all cases and cure all diseases. A growing knowledge of pathological

gress of the diseases which I have found to exist in the upper urinary passages. They also forcibly illustrate the development in the same case of all four of the classes, or stages, previously described.

Thus have I diagnosed in this case sacculization of the left ureter, with obstruction just above the orifice to the outflow of the retained secretions, without perceptible disease of a serious nature in the corresponding kidney, resulting from concentric hypertrophy of the muscular coat of the bladder, and constriction within its grasp, probably, of the corresponding portion of the affected ureter.

Whatever may be the final result of the treatment in the case, now cut short for three months, I can at least claim thus far that a correct diagnosis has been reached, and that the domain of gynecology in this direction has been extended. It remains yet to be seen what the exact limit of such work in this new field of investigation may be, and how much further general surgery can be depended upon for the relief of such sufferings by the sacrifice of an endangered or diseased kidney, approached from the opposite direction through the resources of lumbo-nephrectomy.

One is here naturally led to ask, of what value or practical use would attempted catheterization of the ureter for diagnostic purposes have been in such a case, made through the urethra with dilatation, or, as to that matter, "free handed" without dilatation, for which it has been claimed that dexterity and supreme skill are all-sufficient? For my part I answer that it took me thirty-six days to find the ureteral orifice, and I had the advantage, too, of a window in the vesico-vaginal septum, through which I could examine and study well the inside of the bladder. I possessed in the procedure also a ready method for treating the existing inflammatory lesion in the ureter, besides being able to guard against acute attacks of cystitis.

conditions and of the physiological resources of the system for their removal, notably by cutaneous, renal and intestinal excretion, threw some light upon the search, and so it went on, and as the centuries went by, though hardly with them, one by one a specific was found, and for this malady and then that a revision of prognosis had to be made, and a rewriting of its mortality tables had to be attended to.

Scientific medicine has seldom disdained to join in the chase empiricism led blindfolded; not always discovering more with her open eyes than empiricism would stumble upon in the dark; but she has oftener been content to accept the dictum that most maladies are self-limited and essentially unalterable in their evolution, and that medical treatment is powerless to do more than mitigate their severity.

But of late years a new science has propounded to medicine a new problem. Bacteriology has come to the aid of the pathologist and, by revealing causes of disease hitherto only dimly surmised, has not only sanctioned the old pursuit of what often seemed a chimera, but has led it into wider fields and for larger purposes. It has also imposed new responsibilities. It is not enough now to cure the sick man, or help him to survive his sickness. It is demanded that the specific cause be determined at the outset and stamped out before the germ has taken root; or, when this is impossible with the existing knowledge of pathological microorganisms and their appropriate germicides, the alternative is suggested, when practicable, of so sterilizing the soil in which they have implanted themselves as to inhibit their development, or, again, of rendering innocuous to their host the cadaveric substances their life, development, death and decay have engendered.

It is not necessary to point out the eagerness with which the medical profession has entered upon the solution of this problem, which the success of surgical antisepsis seemed to promise as so easily practicable; but it is certainly not reassuring to contemplate the wide differences in results. Still, it is well to reflect that medical antisepsis has its limitations which surgical has not. The latter is purely local in its purposes, being addressed only to the open wound, which alone is vulnerable to the attack of the surgical microbe, and which will bear without danger the presence of antiseptic agents which, if introduced into the general circulation, would prove speedily fatal. Without this limitation imposed by the paramount consideration of the patient's safety, it is highly probable that most, if not all of the specific diseases would have an aborting remedy in corrosive sublimate, or carbolic acid, or iodine, not less sure in result than they prove in the field of surgery. And with this limitation, their effect upon the normal evolution of some diseases is such as to entitle them, with few qualifications, to the name of specifics.

Standing easily first in the interest of the profession in the search for a practical and reliable germicide is typhoid fever. This would be expected from the wide diffusion of the disease over both hemispheres, and its great fatality. More than this, the universal acceptance of the doctrine of its bacillary origin has afforded a common ground on which all investigators can work in harmony to a common purpose. It is true all are not agreed as to the identity of this specific microorganism; nor is it essential that they should be. There is no reason to believe that these organisms differ so widely in their resistance to germicides that the practical physician should be called upon to declare his adhesion to Klebs and his *bacillus typhosus*, or to Wernich and his evolutionized *bacillus subtilis*, or to any other bacteriologist possessed of any other bacillus. It is enough for him to know that some specific germ gains access to the circulation—some microbe develops, multiplies and dies; profoundly affecting the vital forces by its existence within the system, or by the products of its own vitality, or its own dissolution. This affords the basis for a rational search for some antidote to the disease—that is, for some agent inimical to the existence or development of the microorganism, or eliminative of the products of its vital activity and decay, or both. And so, upon this belief upon *some* infecting microbe as the cause of typhoid fever, has been built the goodly edifice of specific treatment as it stands to-day. The calomel of Ziemssen, the iodine of Prof. Davis, the carbolate of iodine of Bartholow, the bismuth salicylate of Desplats, the ammonium salicylate—and even corrosive sublimate, claim attention here—all embody the common aspiration for some remedial agent as hostile to the bacillus of typhoid as is the sublimate to the micrococcus of wounds.

Fairly a part of this treatment, though falling short of its entire scope, may be reckoned antipyretic and local antiseptic medication; the former with the view of lessening tissue metamorphosis—though some count this as only an incident of a general antisepsis—the latter with the view of disinfecting the contents of the intestinal canal, poisoned both by the products of intestinal excretion and glandular and epithelial detritus thrown off by the ulcerated Peyer's patches, and liable to a reabsorption into the general circulation.

Remotely allied to the former is the abstraction of surface heat by the protracted cold bath—happily in disuse in this country, and cool or tepid sponging of the surface. The typical antipyretic remedies are antipyrin, antifebrin and the salicylates, and the customary choice of them is probably in the order in which they are named, with a growing partiality for antifebrin. This and its older relative have somewhat revolutionized the hospital treatment of typhoid fever throughout America and Europe, and, conjointly with proper

eliminants and stimulants, may be said to constitute the hospital plan. Judging it as such, it should be considered with the respect due such authority. As such, perhaps it is the best that the existing state of knowledge admits of. But judging of the respective merits of different lines of practice proposed upon anything less than a comprehensive view of all the conditions involved would be liable to lead to wrong conclusions. That it has led to wrong conclusions and to wrong methods in general practice seems to me quite certain. Typhoid fever is almost *sui generis* in this, that its proper hospital treatment affords no safe criterion for the guidance of private practice. More than any other disease it has its distinct epochs, which claim distinct consideration. It is the usual fortune of the hospital to receive its typhoid patients after the great therapeutic opportunity has passed for good; that is, after the epoch of glandular infiltration and ulceration has been attained. Here abortive treatment is out of the question, and no thinking physician would attempt it, realizing that now only the resources of expectancy remain. Not the expectancy of inaction, for its resources are as specific and defined as any agency for the abortion of the fever; nevertheless, that expectancy which admits the impossibility of shortening its course. What remains to it now is to retard tissue change, and thereby restrain excessive heat; the promotion of elimination through all the available emunctories; disinfection of the contents of the bowels, and nourishment and stimulation, to carry the patient to a more or less remote convalescence.

The mistake of general practice is to imitate this treatment from the beginning to the end of the malady, thereby not only missing the chance of aborting it, but positively adding to its dangers by the too prolonged exhibition of antipyretics by no means harmless when restricted to the shortest possible period.

For intestinal disinfection and elimination, and even for general antiseptics, calomel seems to be growing again in favor; though there are many who hail its renaissance with great satisfaction who do not accept the opinion of Ziemssen that it is the only remedy deserving the name of specific. But calomel was a standard and, with many, the only remedy, long before the bacillus of typhoid was discovered, or a germicide and antiseptic treatment conceived of; and the elder practitioners, who remember the failures and disasters which, by their own confession, overweighed its benefits and at length determined its abandonment, will be slow to believe that a new-found bacillus can rehabilitate an oldtime discredited remedy, even if it prove to be a germicide. These may give it a subsidiary place in the treatment of expectancy, but they will look for specifics among agents which, whatever their promise as microbicides, are happily without a history as

odonticides, and are fairly above the suspicion of homicide.

If some, to whom this record of past failure and disappointment is not a personal reminiscence, should resort to calomel for its specific results, they would doubtless do well to follow the example of Liebermeister, Traube, and others equally conservative, and limit the dose to 8 or 10 grains daily, for three or four days only.

The great importance of the subject demands a further reference to a point to which allusion has already been made: the danger attending the use of antipyrin and antifebrin in private practice. Admitting that in hospital practice, where the patient is under constant supervision, this danger is so slight that it can be disregarded, I believe that where his environment is less favorable, and especially where his remoteness from medical aid leaves him to the chances of the daily or less frequent visit of his attendant, the routine use of either of these remedies, in doses at all adequate, would be attended by a peril, both near and remote, out of all proportion to the benefits expected from them. Whether or not, as claimed by many, they produce changes in the crisis of the blood, and even in the parenchyma of organs, more or less permanent, certain it is they produce temporary conditions of grave and alarming significance, and with a suddenness no ordinary prudence can forestall. Sudden cyanosis and collapse are occasional results common to both, and these phenomena have been reported by competent observers so many times that to disregard these repeated warnings is, to say the least, censurable.

The effects of antifebrin have been scrutinized with especial care, both from the standpoint of the clinician and the pathologist, and the verdict of the profession seems to be stated by Dr. J. Solis-Cohen when he says that it is much more dangerous than antipyrin. He goes so far as to say that when even the small dose of 3 grains is given in a case of typhoid, the patient should be revisited in an hour, and before another dose is given. But he has the further objection to it that, while permitting a frequent and sudden rebound of temperature, it does nothing, on the other hand, to shorten the course of the disease.

Dr. F. M. Bauer, of New York, has several times seen cyanosis follow three or four $\frac{1}{4}$ gram doses, and Dr. Doll, of Berlin, describes a case characterized by extreme pallor and coldness of the surface, rapid respiration and violent heart-beat, general numbness and final unconsciousness, from a small but unknown dose; the patient recovering the next day.

Prof. Bokai, of Klausenburg, has determined, after a long series of experiments, that an 0.5 per cent. solution of acetanilide, with 0.6 per cent. solution of salt, dissolves the red corpuscles of the blood in man, the rabbit and the dog; and he is of opinion that this occurs in some degree in life,

when the drug is given in medicinal doses. This, he thinks, partially accounts for the diminished production of heat; but this is determined more by the paralysis of terminal nerve filaments and of the muscles themselves, and when this paresis affects the muscles of respiration, cyanosis follows.

Herczel's researches, both experimental and clinical, led to the discovery of profound changes in the blood. Under large doses the blood of dogs became reddish-black, and gave evidence of the presence of methæmoglobin, hæmoglobin being diminished 10 to 18 per cent. Also, a quantity of dissolved coloring matter was present in its serum, while its alkalinity was somewhat reduced. The clinical results correspond. Many of the phenomena of aniline poisoning attend its use, and if this is continued four to six weeks, in quantities of 30 to 45 grains daily, the dissolution of the coloring matter of the blood becomes quite manifest.

Dujardin-Beaumetz arrives at similar conclusions, both from his own observations and the experiments of others. He remarks that "the toxic effect of acetanilide seems to be to rob the blood little by little of certain principles essential to calorification, causing thus a progressive refrigeration which is incompatible with life." He cites the investigations of Lepine and Weill to prove this, but admits that the latter took 4 grams at once without any obvious effect whatever. Nor does he overlook the changes in the crasis of the blood already alluded to, pointing out that *pari passu* with the diminution of the hæmoglobin, methæmoglobin appears, as indicated by its characteristic ray in the spectrum.

This distinguished observer has other objections to acetanilide as an antithermic which, perhaps, affect the question under discussion more directly. Remarking that it disappears absolutely in the system, so that no trace of it is found in the excretions, he complains that it is of moderate and unequal energy, while practically devoid of antiseptic properties. Furthermore, he declares it to be very inferior to antipyrin as an antithermic, and so resembling phenic acid that, like the latter, it should be discarded as an antipyretic.

A paper read by Dr. George N. Acker, of Washington, before the District of Columbia Medical Society, two years ago, surveys briefly but comprehensively, and very conscientiously, the literature of antipyrin in fevers, and gives the results of his own experience with it in his service as attending physician to the Children's Hospital. He quotes the large experience of Jahn in its favor; that of Macknew, Ernst, May, Burrs and others, for and against, showing that to offset its tolerably uniform antipyretic effects there stand the objections that such effects are liable to be quite evanescent, and to be attended with functional and organic disturbances varying all along from the cutaneous exanthem to cyanosis and collapse, and

even to sudden death, as in the case of Burrs, where the autopsy showed congestion of the brain and its membranes, and of the lungs, and infarcts of the kidney, and of an enlarged and softened spleen. In this case only 45 grains were administered, 30 grains being given at one time and the remainder after a short interval.

Dr. Acker greets with pleasure the advent of any drug that will control the temperature in typhoid fever, and thinks he has found it in antipyrin; but he frankly admits that it does not arrest the natural evolution of the disease.

The discussion following this paper was equally significant, the weight of opinion being decidedly against the use of antipyrin in typhoid, as the personal experience of some of the members present had illustrated the very dangers pointed out by Dr. Acker.

My personal experience with these remedies is hardly relevant to the present question; for, while I have used them many times as analgesics, and without ill effects, I have only used the acetanilide in two cases of typhoid, and then with but negative effects; that is, it reduced the temperature but slightly and temporarily, while the gastric disturbance attending its use was greater than that from the remedy for which it was substituted for the purpose of relieving the stomach. But all this signifies nothing, for, as already pointed out by Dujardin-Beaumetz, the danger from acetanilide lies not in its use as an analgesic, but as an antipyretic; for the obvious reason that conditions requiring antithermic measures are invariably associated with asthenia or a tendency thereto; while, in typhoid, are superadded grave anatomical changes, which call for reparative treatment, rather than that involving further disintegration of structure and impairment of function and vital force.

These, then, are the objections to the purely antipyretic treatment of typhoid, just reviewed:

It does not shorten the course of the disease.

It only relieves symptoms of secondary importance, while adding complications sometimes of the gravest importance.

It supersedes remedies which give fair promise of aborting the disease at the outset, or failing in this, of both mitigating its severity and shortening its duration.

What are these remedies? Probably the best so far known are those already named. Each one of them is more or less commended to our confidence by clinical reports and comparative statistics which show better results than either antithermic or expectant measures; but it is the purpose of this paper to consider but one of them.

Two years ago I had the honor to propose to this Society the salicylate of ammonium as a specific germicide, antiseptic and antipyretic especially adapted to the treatment of typhoid and allied fevers, and septic inflammations; submit-

ting these provisional propositions, among others, subject to the results of further experience :

The salicylate of ammonium is to be ranked among the most efficient of the antipyretics.

In all fevers characterized by extreme adynamia it ranks among the safest, owing to its ammonium base.

It is stimulant as well as antipyretic, and thus of itself fulfils indications only met by a combination of remedies.

It is an agent of wide germicidal powers, being promptly efficient in affections of great etiological and pathological differences, each confessedly arising from its own proper specific infecting microörganism.

As a remedial agent in typhoid and remittent fevers it is unsurpassed ; aborting them at the outset under favorable conditions and greatly mitigating their severity and danger under circumstances less favorable.

These conclusions were submitted with some diffidence, not from doubt of their substantial accuracy, for they had been drawn from an experience of two years with cases differing widely in character and severity, but from regret that the new remedy had not the good fortune of a better sponsor, of well-known and respected authority.

During the two years that have elapsed since that time more than fifty cases have fallen under my personal observation, including both typhoid and remittent fevers, and that other vague class, with somewhat too indeterminate clinical boundaries—typho-malarial fever. These have afforded, under the same treatment, substantially the same results as reported in the first series of cases. Some of them were aborted in the first two or three days of high temperature, after a preceding malaise of several days ; some ran a week, and some nearly two weeks, with mild symptoms throughout. My notes show but three cases lasting beyond the tenth day, except one discharged convalescent on the tenth day but a week afterward suffering a mild relapse. This, it may be remarked, was the only case of relapse that has occurred, and this might doubtless have been averted but that the patient, who lived far in the country, thought it unnecessary to send for help.

One was a case that passed unrecognized for the first two weeks. The patient, a man of 70, found himself unable to empty the bladder, and sent for aid to the nearest physician, who resorted to the catheter twice daily for a week. At the end of this time I was sent for, and obtained a history of continuous fever and progressive decline, the urinary trouble still remaining. Cystitis was excluded by the character of the urine ; and, in the absence of abdominal symptoms, the elevated temperature seemed best accounted for by urethral fever. Quinine was given to control this, and for support, and a nourishing diet was directed. For a week more the temperature continued

to range from 101° to 102° , but vesical adequacy returned in the course of two or three days.

About this time his wife took to her bed, after several days of great lassitude, and soon afterward their son, both displaying the typical features of typhoid, including—in the case of the latter—hemorrhage from the bowels. The former had considerable subsultus and delirium, and almost constant hiccough for twenty-four hours. But notwithstanding these untoward symptoms and her advanced age—over 70 years—her temperature fell to normal on the seventh day, and her convalescence was rapid enough to enable her to resume her duties as nurse to her husband before his fever had quite left him.

These coincident and similar cases are suggestive in several particulars. The first may be regarded as a type of the hospital case in this respect, that when its character was fully recognized it had passed beyond the point where abortive treatment was available. It is true that, as a mere antipyretic and antiseptic measure, ammonium salicylate was given in the same manner as in the associated cases, but, however, without any expectation of a like result. The remedy did all that was possible under the circumstances ; it steadily subdued the temperature and gave a degree of comfort during the course of sickness remaining not known in its first half.

The second case illustrates the practicability of abortive treatment in cases where recovery at all is problematical. The age of the patient, and the early occurrence of marked asthenia, were more suggestive of stimulating and supporting than of specific measures—in fact, were calculated to discourage the latter as more likely to uselessly perturb than benefit.

Again, a comparison of the expectant and abortive methods is here afforded, as significant as a much larger number of cases would ordinarily permit. It proves nothing, but it presents probabilities too strong to be disregarded.

Another case has interest because the typhoid attack occurred in the eighth month of pregnancy, and because of the temporary substitution of acetanilide in the treatment. This was because the salicylate was not at first well borne by the stomach. For three days the acetanilide would often reduce the temperature a degree to a degree and a half, then it rose to 103° , when the ammonium salicylate was given again, with the effect that the high temperature came down three degrees within twenty-four hours, and disappeared entirely three days afterward, when I found the patient sitting up and well enough to be discharged. Her fever had run a course of nine days.

In this case there was no doubt of the diagnosis, for the clinical history was complete, and another case occurred in the same house during her convalescence.

(To be concluded.)

FOUR CASES OF OOPHORECTOMY.

Read before the Medical Society of the District of Columbia, April 18, 1888.

BY J. TABER JOHNSON, M.D.,
OF WASHINGTON, D. C.

Case 1.—Mrs. S., æt. 33, married, the mother of two children, the youngest being 8 years old, has been a sufferer more or less since the birth of her last child; at first from subinvolution, then from prolapse, and for the last three years from an incurable anteversion, and all the time from painful and profuse menstruation.

I have been her physician for about fifteen years, and during the past seven years have exhausted all my resources to keep her uterus in position and lessen her monthly flow, without accomplishing any lasting good. During the summer of 1885, when about to leave the city for a two months' vacation, I turned her over to Dr. Magruder, who reported upon my return that he had been unable to keep her uterus in position.

The next summer I went to Europe, and Dr. Buym attended her with a like experience. In addition to her troubles already mentioned she had hydrometra, passing at times with a sudden gush half a pint or more of muddy-looking water from the uterus. Whenever the uterus was lower down than usual she had reflex nausea and persistent vomiting, which could only be relieved by replacing the organ and retaining it in position by some artificial support.

During the last year the tenderness became so great that she was unable to wear anything but a cotton tampon. She suffered much from ovarian pains also. Several months ago I discovered a fibroid enlargement in the anterior wall of the uterus. In the three months following this discovery it doubled in size and interfered constantly with the function of the bladder. She was compelled to remain most of the time in her room, only taking dinner with the family. The general tenderness in the pelvis had increased so much by January 1, 1888, that I was at my wits' end. She could no longer tolerate the cotton supports, and she was in greater need of them than ever before.

I believed she had a growing fibroid, and that she had a stormy, painful and dismal life before her, and I saw only one way out of her troubles—unless electricity would help her. I tried this several times, but each application made her so nervous and affected her so unpleasantly that she finally refused to have any more of it. I then told her that I had but one more arrow in my quiver, and that was Tait's operation.

She thought it over and talked it over with her family and friends, and finally requested that it should be done, as she much preferred to run the risk of death than to live on in the same way she had been for the past few years, with no other prospect of relief.

She entered my private hospital on the 9th of

February last, and I removed the uterine appendages on the 11th of the same month. She made a perfect recovery, without rise of pulse or temperature. She had no pain and took no medicine.

As she had been so long an invalid, she remained in the hospital two months in order to regain her strength as much as possible before resuming her duties as head of her household. I cannot better state the result than by quoting a few lines from a letter she left for me when she departed:

MY DEAR DOCTOR:

It is not without regret that I leave your Sanitarium to-day. I am reminded of the feelings with which I came. After suffering every moment of nearly four years, until it was far easier to choose the rest which death gives than living—now to return home free from pain; can one help loving a place where she was so changed. Oh, what a change has been wrought. I go from here verily a new creature. To say you have given me back my life and health, through the blessing of God, is only telling a part. Only a few weeks since the thought of living was a burden; now the word life means volumes. Oh for the pen of a ready writer, that I might tell you of my gratitude, etc.

Case 2.—Miss S., sent me by Dr. Wells from Hyattsville, only 17 years old. She fell from a hammock three years ago and injured the end of her coccyx. Since that time has had constant coccygaria with a desire to pass water every ten or fifteen minutes. She has led a miserable existence. Many physicians have seen her, and still she grows worse instead of better.

Last winter she went to Baltimore and spent four months in a hospital under the care of an eminent gynecologist. Added to her other troubles she had valvular disease of the heart, a legacy from frequent and painful attacks of rheumatism, and a constant burning pain in the left ovary. This finally became her most distressing symptom. She was sent to a private room in the Providence Hospital, where, after a month spent in ineffectual treatment, I removed the painful ovary and also about an inch of the injured coccyx. She made a good recovery, and has been perfectly relieved of her ovarian pain and her tormenting desire to pass water. For awhile she was free from pain in the spine, but recently has been suffering from muscular pain about the seat of injury. In this case only one ovary was removed, as the other appeared to be normal.

Case 3.—Mrs. S., æt. 37, married nineteen years ago, when only 16. Has never been pregnant; has always suffered at her monthly periods.

She came under my care about the 10th of March. She had been under medical treatment of all known and many unknown varieties for more than twenty years, and I had no hesitation in at once advising the removal of the uterine appendages. This was agreed to by the patient and her family. She came to my hospital, and the operation was done three weeks ago to-day.

Much difficulty was experienced in removing

one ovary, which was enlarged to the size of a lemon. It ruptured as it was being drawn out of the incision, and its contents, which were black and thick and sticky, were expelled into the abdominal cavity. I had much trouble to cleanse the omentum and intestines, as the water used to wash out the cavity failed to dislodge this gluey, gummy black mud it looked.

I put in a drainage-tube, but was very anxious for the first week. On the morning of the fifth day she had a temperature of 101° , by night it was nearly 106° , and the patient had that indescribable facial expression which oftens betokens speedy death when the peritoneum has been injured. I gave her 20 grs. of quinine with calomel and Rochelle salts, and put an ice-water coil over the abdomen, and when I bade her good-night I never expected to see her alive again.

In the morning her temperature had gone down to 100° and she has done perfectly well ever since; is now sitting up in a chair and walking about her room, is free from pain and I feel sure will soon be well.

Case 4.—Mrs. W., æt. 26, married, no children, was brought to me by Dr. Ralph Walshe. Mrs. W. had been well up to six months ago, when she began to suffer with constant pain in her back. Dr. Walshe found an enlarged and tender and prolapsed ovary. No treatment was of any avail—she constantly grew worse, and when any pressure was brought to bear upon the ovary she had nausea.

During the last two months it grew rapidly and, being located deep down in Douglas' pouch, there was constant pain. A strong current of electricity was tried, but the effect was unpleasant; she had to go to bed for several days, had a rapid pulse, fever and abdominal tenderness. It was not repeated.

When I saw her with Dr. W., I at once recommended its removal. This was agreed to by herself and husband and family. She entered my private hospital on the 12th inst. and I removed the tumor on the 14th. It proved to be partly ovarian and partly a broad ligament cyst, or else two small cysts and ruptured into each other.

The patient is now in her fifth day, with a pulse of 84 and temp. of 99° . Has suffered from wind colic. While she has much pain from this source, her pulse and temp. remain about normal.

MEDICAL PROGRESS.

ELECTROLYSIS IN DIAGNOSIS.—DR. E. C. GEHRUNG, of St. Louis, in speaking of the diagnostic value of electrolysis, says:

From the literature on electro-therapeutics, as well as from my own practice, I consider myself authorized to state that one of the effects of electro-puncture, especially by the cathode or negative pole, is that the tissues perforated by the non-insulated part of the electrode become matted together and form a more or less continuous fistulous tract, whereby the escape of fluids into the interstices or intervals between the different tissues so perforated is prevented. It also appears to modify the tissues along the tract of the electrodes so that inflammatory processes will rarely, if ever, be witnessed. Even punctures through the *peritoneum* seem to be of little importance, for which we have the attest of many trustworthy authorities.

If these premises are correct, we may conclude that:

1. Electro-puncture, especially if combined with drainage, etc., is a curative agent for many tumors, as fibroids, cysto-fibroids, cysts of a great variety, and abscesses, and that,

2. Electrolysis renders exploratory punctures comparatively harmless, and far superior to ordinary acupuncture with aspirator needles or the needles of the hypodermic syringe, which latter means have formerly been recommended to clear up a doubtful diagnosis.

Based upon these facts, we are authorized, when the absolute differentiation between two possibilities has failed, when put to the test of the usual legitimate means of diagnosis, and especially if both otherwise admit of electrolytic treatment for their cure, we are not only authorized, but may safely use the drainage-electrode to clear up the mystery. The question being decided, either electrolysis alone or combined with drainage may be used, as the case demands. In many cases, an otherwise doubtful diagnosis may thus be decided, while in fact the curative treatment for either is started. This appears to me to be a far safer way to differentiate than by opening the abdomen when in doubt.

Had Dr. Semeleder, in his operations on ovarian cysts by electrolysis, made his punctures at the most dependent portion and drained the cysts, he would very probably have lessened the duration of the treatment considerably, diminished the number of punctures necessary, and lessened the mortality in his cases. Dr. Semeleder would probably have found more followers. Dr. Apostoli advises and practices *electro-cantery* puncture for hydrosalpinx. Dr. A. makes a large fistulous tract by means of a large trocar. This corroborates my view as expressed above, that most intra-

A CLUB FOR THE DEAF.—It is proposed to establish in Glasgow a club for the exclusive use of the deaf, and the proposal has the support of several Glasgow aurists, since the bringing together of persons that can speak fluently, but are dull of hearing, or altogether deaf, would promote social intercourse and further the science of lip reading.

pelvic and intra-abdominal cysts can be so reached and drained, and, I feel certain, with much greater facility and safety by my trocar and canula in combination with electrolysis.—*Amer. Jour. Obstetrics*, August, 1888.

PSYCHICAL BLINDNESS THE KEY TO A LESION IN THE ANGULAR GYRUS.—In his Address on "The Surgery of the Brain and Spinal Cord," at the fifty-sixth annual meeting of the British Medical Association, DR. WILLIAM MACEWEN related the case of a man who had received an injury about a year previously, suffered from deep melancholy, strong homicidal impulses, relieved by paroxysms of pain in the head of indefinite seat. Though the pain was excruciating he welcomed it, as it temporarily dispelled the almost irresistible impulse to kill his wife and children or other people. Prior to receiving this injury he was perfectly free from impulses of this kind, and had led a happy life with his family. Behind the angular process of the frontal there was a slight osseous depression, which could not account for his symptoms. There were no motor phenomena, but on minute inquiry it was discovered that immediately after the accident, and for about two weeks subsequently, he had suffered from psychical blindness. Physically he could see, but what he saw conveyed no impression to his mind. An object presented itself before him which he could not make out, but when this object emitted sounds of the human voice, he at once recognized it to be a man, who was one of his fellow-workers. By eyesight he could not tell how many fingers he held up when he placed his own hand before his face, though by the exercise of his volition in the act, and by other sensations he was cognizant of the number. He had been in the habit of reading the New Testament, and when he had so far recovered from his injury, he wished to resume his reading. He knew where the book lay near his bed and could put his hand on it in the dark. One day he stretched out his hand, took the book, recognizing it, through the sense of touch, by its smooth leather covers, and the deeply indented letters on its back; he opened it, saw what he considered must be the letters, and the blocking of them into divisions for the words, but they were unknown symbols to him, they conveyed no impression of their meaning, the memory of their signs was gone, it was a sealed book to him. These phenomena, however, gave the key to the hidden lesion in his brain. On operation the angular gyrus was exposed, and it was found that a portion of the internal table of the skull had been detached from the outer, and had exercised pressure on the posterior portion of supra-marginal convolution, while a corner of it had penetrated and lay imbedded in the anterior portion of the angular gyrus. The bone was removed from the brain and re-implanted in proper

position, after which he became greatly relieved in his mental state, though still excitable. He has made no further allusion to his homicidal tendencies—which previously were obtrusive—and is now at work.

Such cases of complete mind-blindness are rare, and the definite localization in this case will assist in indicating in man what function the anterior portion of the angular gyrus and the posterior portion of the supra-marginal convolution subserve.—*Brit. Med. Journ.*, Aug. 11, 1888.

GUNSHOT WOUND OF LIVER COMPLICATED WITH COMPOUND COMMINUTED FRACTURE OF THE RIBS.—DR. A. P. FRICK, Ft. Selden, N. M., reports the case of a healthy man, æt. 57, accidentally receiving a 44 calibre pistol shot wound, $5\frac{1}{2}$ inches to the right of the anterior median line of the body, and about midway between the axilla and the anterior superior spinous process of the ilium, emerging posteriorly about 1 inch lower, and $5\frac{1}{2}$ inches from the posterior median line of the body. The portions of the seventh, eighth and ninth ribs lying in the track of the ball were comminuted. Profuse hæmorrhage continued for more than twelve hours, when it ceased spontaneously. Five days later, under ether, the two wounds were connected by an incision, the loose fragments of bone removed and the sharp edges rounded off. This exposed a lacerated wound of the right lobe of the liver, with an abscess $1\frac{1}{2}$ inch deep about in the middle of the exposed portion of the liver. The lacerated parts were trimmed and the abscess opened, drained and irrigated. A drainage-tube was then inserted and the wound closed with interrupted suture, sublimate dressings applied, and the patient proceeded to a good recovery, complicated only by some troublesome bedsores and a slight necrosis of the proximal end of the ninth rib, being discharged perfectly recovered three months later.—*Phil. Med. Times*, May 1, 1888.

TREATMENT OF UNUNITED FRACTURE OF THE NECK OF THE FEMUR.—In the *Riforma Medica* of August 14 a case is related in which PROFESSOR LORETA successfully treated an ununited intracapsular fracture of the neck of the femur by scraping the fractured surfaces and inserting a bundle of metallic sutures between them. On January 23 a robust man, æt. 36, was admitted into the Bologna clinic with the history of a fall on the left hip nineteen months previously, since which he had been quite unable to stand and had suffered from constant severe pain, shooting from the left hip-joint into the gluteal region, the point of greatest intensity being over the course of the sciatic nerve. The limb was much wasted, but it was normal in position and scarcely at all shortened. Flexion and extension of the thigh on the pelvis were almost impossible, but the patient

could occasionally execute very slight movements of rotation and abduction. In rotation, he was sometimes conscious of faint crepitus in the trochanteric region. On February 15 Professor Loreta operated with full antiseptic precautions. He made a long incision behind the great trochanter, so as to expose the capsule of the joint, when he noticed a depression between the intracapsular and extracapsular portions of the neck of the femur. On moving the limb, it was found that there was a fracture without displacement in that situation. The capsule was then opened, the fibrous tissue between the fragments divided, and the fractured ends carefully freshened by scraping with a raspator. As it would have been very difficult to wire the fragments, a bundle of from eight to twelve metallic sutures was introduced between them, and brought out at the lower angle of the external wound. The wound was carefully cleansed, a drainage-tube inserted, the edges brought together with deep and superficial interrupted sutures, and the whole covered with a sublimate dressing. A long outside splint was then applied. Five days after the operation the bundle of metallic sutures was removed, and the wound healed by first intention. In less than a month the pain had permanently ceased, and fifty-five days after the operation the patient left the hospital, being able not only to stand, but to walk with no further support than an attendant's hand.—*British Medical Journal*, August 25, 1888.

OXYCYANIDE OF MERCURY THE BEST OF ANTISEPTICS.—Compared with the corrosive chloride (*Comptes rend. d. Soc. d. Biol.*, July 6, 1888, p. 585):

1. Its solution has a slightly alkaline reaction and precipitates albumin only slightly.
2. It is less irritant than solutions of sublimate.
3. There is less absorption by tissues than in case of sublimate.
4. Solution $\frac{1}{1000}$ th does not attack, except slightly, the materials used in surgical instruments.
5. Tested by its power of keeping soup, the antiseptic power showed itself six times greater than that of the bichloride.
6. Tested by the power to destroy the micrococcus pyogenes aureus, the advantage was slightly in favor of bichloride, $\frac{1}{1000}$ th to $\frac{1}{3000}$ th.
7. Employed on suppurating surfaces or to render a mucous surface antiseptic, it furnishes much better results because of the tolerance by tissues and of feeble absorption.

The cyanide of mercury has about the same properties, but the oxycyanide is more powerful against the micrococcus pyogenes aureus.—*American Journal of the Medical Sciences*, Sept., 1888.

PAPOID IN THE TREATMENT OF DIPHTHERIA.—DR. J. R. BROMWELL, of Washington, reports

six cases of diphtheria in which papoid was used successfully. From the results in this limited number of cases he feels justified in drawing the following conclusions:

That papoid, applied to diphtheritic membranes, is a safe and reliable solvent. That it possesses antiseptic properties; that the temperature falls rapidly with the disappearance of the membrane, which, according to Jacobi, proves the rapid absorption and elimination of the diphtheritic poison; that the phenomena of secondary blood-poisoning were absent, owing to the rapid solution of the membrane, supplanting the processes of suppuration by which it is removed if left to itself. That the period of incubation either varied from eight days to thirty-five days, or the poison was conveyed to the two children, who had no communication whatever with the sick, by the clothing of those who did the nursing. That age is not exempt; that there is a marked family susceptibility to the poison of diphtheria, as evidenced by the fact that, whilst a friend who assisted in nursing, and the servant, a colored woman, who was in the sick-room a dozen times a day, escaped, every member of the family, from the youngest child to the grandmother, contracted the disease.—*Amer. Journ. Obstetrics*, August, 1888.

CHLORIDE OF METHYL AS A LOCAL ANÆSTHETIC.—The cold developed by the passage of chloride of methyl from a liquid to a gaseous state was utilized some time since by a French surgeon, M. Debove, for the purpose of inducing local anæsthesia. Certain modifications have been introduced by M. BAILLY, of Chambly, by which the method has been rendered much more practical and safer. Instead of freezing the part by allowing a jet of the gas from a siphon receptacle to play upon it, he saturates plugs of cotton wool with the liquid, and places them on the spot to be operated on, or on the seat of pain. It has been found exceedingly useful in the treatment of neuralgia, sciatica, etc. To facilitate the transport of the liquid he has designed a double glass tube, the inner one containing the methyl, and the space between the two tubes being rendered a vacuum. By means of a capillary tube the anæsthesia can be directed to particular spots too small for the application of a tampon. When the latter is employed, in five or six seconds the skin becomes blanched, indurated, parchment-like and depressed. The anæsthesia thus obtained is amply sufficient to allow of incisions, scarifications, cauterizations, etc., without sensation.—*British Medical Journal*, August 4, 1888.

TREATMENT OF ABNORMAL DEVELOPMENTS OF EPIDERMIS; CALLOSITIES, CORNS AND WARTS. (ROSEN, *Münschen Med. Wochens.*, No. 28, 1888) following Nussbaum's suggestion, has employed

salicylic acid in substance instead of dissolved in collodion, applying it as a powder upon the lesions in question, and covering with moistened bandages. The results have been very good. The method consists of the following procedure: The lesion to be treated is first made moist with an aseptic solution, and then covered with quite a thick layer of salicylic. Over this is placed some of the finest borated lint in four thicknesses, and the whole is bound down with a piece of gutta-percha. This dressing is to remain, in ordinary cases, for five days without being disturbed. After the dressing is removed the pathological process is found easily and painlessly cured, and without any bleeding. In more obstinate and harder lesions the dressing must remain on for ten days, or after five days be renewed.—*Journal of Cutaneous and Genito-Urinary Diseases*, September, 1888.

BITUMINATE OF IODOFORM.—The application of iodoform is a favorite method of treatment of chancres with many, but there are certain disadvantages attached to it which sometimes render its use impossible. These are, in the first place, the disagreeable odor, which often shuts off the patients under treatment from the society of their fellowmen; secondly, the drug is not well borne by every one, and it occasionally excites an erythema or an eczematous eruption which compels its withdrawal; and thirdly, in ulcers with overhanging edges, the use of iodoform sometimes excites such exuberant granulations that they spring up and press against the undermined edges of the ulcer, preventing the escape of pus formed beneath. DR. S. EHLMANN writes in the *Centralblatt für die Gesamte Therapie*, for July, 1888, that he had long sought to obviate those disadvantages, and finally lighted upon a mixture of iodoform and tar, which seemed to answer the purpose admirably. After a long series of experiments, he succeeded in combining these two substances in such a way that a new preparation was formed in which the particles of iodoform and tar were so intimately mixed that under the microscope only hyaline plates were to be seen, the characteristic crystals of iodoform being not at all, or only indistinctly, recognizable. This bituminate of iodoform, as it has been called by the writer, is a substance somewhat resembling mica, consisting of translucent and transparent scales, of a brownish metallic color, which are easily pulverizable. The characteristic odor of iodoform is wholly absent, and only a slight, mildly aromatic, and not unpleasant smell of tar is perceptible. This is so faint that it is noticeable only when a large quantity of the substance is present, and even this may be covered by mixing a mere trace of liquid storax with a large quantity of the powder. When the preparation is shaken up with a large amount of water the odor

of iodoform returns, but water in small quantity does not have this effect. From this it follows that in wounds having a very profuse secretion the application might not be strictly odorless, yet the author says he has used it in a case of a very extensive bubo, and after two days there was no odor perceived by either the patient or those about him. Dr. Ehrmann has used the bituminate of iodoform with success in the treatment of soft chancres, especially phagedenic, as a dressing, after the opening of suppurating buboes, in gummy tumors and ulcers of the leg. The powdered substance is applied to the ulcer and covered with a thin layer of wadding, over which is placed the ordinary dressing. The dressing is changed every 24 to 48 hours. In the case of soft chancres which are so situated that the dressing becomes saturated with urine, or which secrete profusely, it may be necessary to renew the dressing twice daily.—*Journ. Cut. and Genito-Urinary Dis.*, Sept., 1888.

A NEW METHOD OF TREATING TORPID ULCERS.—DR. F. SPÄTH says, the principal reason for the faulty healing and want of proper cicatrix formation in torpid ulcers, depends upon the imperfect blood supply to the borders, which are usually composed of calloused connective tissue. Upon such a poorly vascularized base, only weak and flabby granulations can spring up. The same conditions prevail if the base of the ulcer is composed of a fascia. The new method of treatment proposed by Späth, consists of free division through the ulcer's borders and into the sound skin, so that the cut edges gap far apart. When the blood flow has been well stopped and an iodoform permanent dressing applied to the wound, an abundant granulation formation takes place, which very quickly leads to cicatrization of the ulcer. In such cases as this the result of cutting around the ulcer, as well as transplantation, are equally ineffectual.—*Centralblatt für Chir.*, No. 14, 1888.

NUTRIENT AND SEDATIVE ENEMA.—The *Revue de Thérapeutique* recommends the following formula:

R. Bouillon of beef	5iij ʒi.
Eggs	j.
Bordeaux wine	3vj gtt. xv.
Sodium bicarbonate	gr. viij.
Tincture of opium	gtt. iv.
Chloride of sodium	gr. iij.
Peptone	ʒiv. ℥.

ANTISEPTIC SOAP.—PROF. REVERDIN gives the following formula of an antiseptic soap that is quite soft to the hands, cleansing and disinfecting them without causing any irritation:

Sweet-almond oil	72 parts.
Soda lye	24 "
Potash lye	12 "
Sulphocarbonate of zinc	2 "
Essence of roses	9 "

—*New York Medical Journal*.

THE

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SATURDAY, SEPTEMBER 29, 1888.

SECONDARY MIXED INFECTION IN TYPHOID FEVER.

Until recently the term typhoid fever was applied to a complexus of symptoms, well recognized and defined, and accompanied by a peculiar lesion of the intestinal tract. As now understood says DR. BAYARD HOLMES, in a paper recently read before the Chicago Medical Society, typhoid fever means the invasion of a non-pyogenic microorganism, however that invasion may take place—whether by way of the intestinal or respiratory tract, and whether or not accompanied by the classical symptoms that characterize abdominal typhus. He says typhoid fever is the infection of the typhoid bacillus, and the direct consequences of such infection. There may be symptoms and results due to infection by other microorganisms, but these he regards as accidental complications, and are not parts of the typhoid disease.

He claims that when the typhoid bacillus invades the human organism, the inflammation of the lymph-glands caused by the irritation of the bacillus and its ptomaine so diminishes their resistance that secondary invasion by pathogenic and other bacteria becomes an easy matter. Some of these bacteria are normal human parasites, causing no injury to the healthy organism. But when any part of the intestine is dead, or when the equilibrium—the neutrality—between the normal organism and its bacteria is destroyed,

the usually harmless and perhaps helpful bacteria may set up a destructive colonization of the tissues, and produce suppuration, coagulation-necrosis, hæmorrhagic infarction, lymphatic engorgement, or any of the results so frequently seen in the infectious diseases.

The typhoid patient, on account of the local intestinal or laryngeal lesion, is easily infected with the pus-microbe, and all the more easily because of his general condition, due to the typhoid infection; a few days continuance of which is sufficient to interfere materially with the usual power of resistance of the lymph apparatus to bacterial invasion. A Peyer's gland, once infected and engorged, may be soon attacked by suppurative bacteria, and this second infection becomes the direct cause of the ulceration and sloughing of the tissue. He thinks the operations of the new factor are shown by the symptoms *i.e.*, the less regular remissions of the temperature, which now assumes a septic character. In favorable cases, the micrococci, carried into the mesenteric glands, he thinks may be arrested and destroyed, the glands returning to nearly the normal condition. In other cases, however, we are told that the filtering power of the overtaxed glands is overcome, and the lymph circulation is flooded with bacteria, which get into the lungs, setting up a second capillary embolism, with the presence of a parasite that can cause destructive inflammation—the pneumonia that Murchison says "rarely appears before the third or fourth week, and may terminate in small abscesses, or, rarely, in gangrene."

But according to Dr. Holmes the presence of the pus-microbe is not the only condition essential to the production of destructive inflammation, nor does it always set up the suppurative process in tissues whose vitality is so much lowered as that of the lungs in the third week of typhoid. From the investigations of De Bary and Grawitz there is reason to believe that we have not attached sufficient importance to the resistance of the tissues. Not all, if even a small part, of the bacteria are arrested in the lungs. Doubtless many of the emboli are taken up by the pulmonary lymphatics and carried to the mediastinal glands, to be destroyed; for we not infrequently see these glands enlarged, and sometimes broken down into abscesses. Sometimes, he adds, when there has been no indication of infection of the

tributary parts, the central lymph-glands become enlarged, and even undergo destructive inflammation. Dr. Holmes reports a case in which, on account of high temperature apparently due to axillary adenitis, he extirpated the enormously enlarged glands; the temperature fell to normal on the fourth day (from 103°), and the patient made an uninterrupted recovery. In this case the evening temperature was normal on the thirty-fifth day of the fever, and continued so for four days, when the patient began to eat solid food. On the forty-first day the temperature rose to 100°, and on the forty-seventh day it was 103°, when the axillary glands were removed. But there are cases in which, after a time, the balance of power ceases to be on the side of the patient, there is no resistance to the invasion of the septic coccus, and abscess formation takes place in all parts of the body. These abscesses may be very small; Popoff has shown that in the brain they are almost always miliary and multiple. And besides multiplying in definite localities, the bacteria may multiply in the circulating blood, constituting a septicæmic condition. Nor is this all. Dr. Holmes says, the destruction at the first point attacked by the pus-microbe may be so great as to involve all the coats of the intestine, and perforation may result. "In this way the largest serous cavity of the body is at once hopelessly infected, and fatal issue is not long delayed." A case of abscess of the spleen in typhoid, successfully operated on by Lauenstein, of Hamburg, was reported in *THE JOURNAL* of March 31. Even when the destructive process, of itself, does not cause speedy death, it may involve a blood-vessel, and cause death from hæmorrhage.

When the resisting power of the tissues has been reduced to a minimum by the low state of nutrition, in typhoid fever any part of the body where germs are present may become infected. Old scars open up, and old bone disease lights up again, from the germination of lasting spores. Such are the views, briefly stated, presented in Dr. Holmes' paper.

SELLING THE SAME GOODS TWICE.

It is, so far as we know, a maxim neither of political economy nor of commerce, that a person should sell the same goods twice to the same per-

son, and try to make him think he is getting something new. This is what the non-graded medical schools of this country are doing. It is not done in other countries; the United States is peculiar in being the only civilized country on the face of the Earth where there are any non-graded schools; it is the only country where a student can graduate in medicine after having had but two courses of lectures; the only country where he can be graduated without having had the advantage of *practical* in addition to theoretical courses; the only one in which the examination for graduation is not always as much or more practical than theoretical; and the only country in which there are medical colleges that admit the student without inquiring into his fitness to enter upon the study of medicine.

As we say, it is in this country alone that medical colleges exist that sell the same goods twice to the same student. This is what the two-course, non-graded schools are doing. When one reads in an annual announcement that one of the requirements for graduation is "two full courses of lectures," he need read no farther to know that the student entering in 1888-89, to take two courses, must in 1889-90 pay for what he has already had and paid for in 1888-89. Nor need one look farther to know that this school is one of a class that graduates, *in two years*, 346.9 students out of every 1000 matriculates, while there is another class that graduates but 209.6 of every 1000 *in three years*—a difference of 137.3 graduates in the 1000 matriculates.

Is it just to the student to sell him the same goods twice, and at the same time put among the "extras" courses that he must take before he is fitted for the practice of medicine? If courses in medical and physical diagnosis, operative and minor surgery, practical chemistry, practical pathology, diseases of the eye and ear, diseases of the chest and throat, operative obstetrics, and diseases of the skin, are not important parts of a medical education, why are they placed in the course at all; even as extras; if they are important why are they not always required for graduation? From one college announcement, of 1888-89, it is seen that while the aggregate fees for the tickets to all the lectures amount to \$140, the aggregate fees for "Private instruction not included in the regular curriculum or in the requirements for graduation" (9 courses) is \$182. The reader of this an-

nouncement is supposed to believe that "The members of the senior class are instructed *practically, in connection with the recitations*, in the most important operations in midwifery and gynaecology;" but we doubt if he will believe it after a moment's thought.

It may be said that when a student attends a school that sells him the same goods twice, and tells him on graduation day that he is fully prepared to practice medicine, when he is not, he does so with his eyes open. Very true; we make most of our mistakes in life with our eyes open. But it is possible that while his eyes may be open, the student does not see—as he will before he has been in practice six months—and it is more than probable he will not recognize the injustice done him. The second-course student will inform the first-course student at his side that Prof. B. will tell a certain story to-day, and that next Tuesday he will tell another. What is that second-course student doing by the side of the first-course man? He is buying the same goods twice. Others have done it before him, and he thinks it is proper. He will see his mistake when it is too late—after he begins practice. We classify studies in primary schools, in grammar schools, and in colleges; why make a heterogeneous pill-mass of medical study, and expect the student to digest it and thrive on it?

"NON-ALCOHOLIC" TONICS AND BITTERS.

DR. B. F. DAVENPORT, Chemist to the State Board of Health of Massachusetts, has recently analyzed 47 tonics and bitters. Of these 46 were found to contain from 6 to 47.5 per cent. of alcohol, the average percentage of alcohol in the 46 being 21.5 per cent. Viewed in the light of the analyses, the statements in the advertisements of some of these preparations seem somewhat misleading. One of the tonics, advertised as "not a rum drink," contains 13.2 per cent. of alcohol. Another, admitted to contain Marsala wine, contains as much alcohol as that wine. A Coca Beef Tonic, advertised as made "with sherry," contains 23.2 per cent. of alcohol, while sherry contains but 18 or 20 per cent. Parker's Tonic, claimed to be a purely vegetable extract, "stimulus to the body without intoxicating," contains 41.6 per cent. of alcohol. Whisky and brandy contain but 50 per cent. of alcohol. The advertisement of this tonic says: "Inebriates struggling

to reform will find its tonic and sustaining influence on the nervous system a great help to their efforts."

Seaweed contains alcohol according to the analysis of Schenck's Sea-Weed Tonic, which is said to be distilled from seaweed, perfectly harmless, and free from the injurious influences of corn and rye whisky. It contains 19.5 per cent. alcohol. Baker's Stomach Bitters contains 42.6 per cent. Hoofland's German Bitters, advertised to be purely vegetable, and free from alcoholic stimulant, contains 25.6 per cent. Hostetter's Stomach Bitters contains 44.3 per cent. Kaufmann's Sulphur Bitters contains no sulphur, is advertised to contain no alcohol, but contains 20.5 per cent. "Dr." Richardson's Concentrated Sherry Wine Bitters, to be taken in doses of a tablespoonful to half a wineglassful or more three times a day, or "when there is a sensation of weakness or uneasiness of the stomach," contains 47.5 per cent.—2.5 less than whisky and brandy. Walker's Vinegar Bitters, claimed to contain no alcohol, contains 6.1 per cent. Copp's White Mountain Bitters, "not an alcoholic beverage," contains 6 per cent. of alcohol. Beer and ale contain from 3 to 5 per cent. of alcohol.

When a person takes the usual "dose" of one of these mixtures—about a wineglassful three times a day, he takes the equivalent in alcohol of about half the quantity of whisky, and on an average a little more than the same quantity of sherry. Moreover, he must take his alcohol "blindfold;" it may be a good article, but the probabilities are that it is not. There are a great many people that would on no account drink beer, wine, whisky or brandy as such, but yet use these "tonics" and "bitters" freely and regularly, give them to their children, and recommend them to persons addicted to the use of alcoholic liquors, as a harmless substitute and cure for the alcohol habit, as a stimulant to flagging or a sedative to over-active organs, and as cures for the most dissimilar diseases.

Nothing better illustrates the human fondness for the mysterious than the readiness with which people buy and consume secret compounds. And while we admit as readily as any one the individual rights of the people, something should be done to prevent avaricious men from poisoning people by selling them compounds that are injurious to health.

A MISTAKE.

Some of the subscribers to *THE JOURNAL* always pay promptly each year, others generally delay until they receive a bill from this office indicating their indebtedness; and there are always a few on our books who, notwithstanding the receipt of one or two bills each year, still allow their accounts to run two or even three years, until their individual indebtedness amounts to \$10 or \$15. During the present month, it being near the end of the first quarter of the *JOURNAL* year, we authorized the clerk to send out bills as usual to all such as had not paid for the current year, simply indicating the amount of their indebtedness. For the few whose amounts had remained unpaid two or more years a special note was prepared which, after stating the amount of their indebtedness, directly requested them to remit the amount without further delay, or else notify us to discontinue *THE JOURNAL*. By some lack of attention on the part of the clerk, some of these *special notes* have been filled out and sent to subscribers whose accounts were in arrears only for the present current year, and, as might have been expected, they have been regarded as unnecessarily captious or offensive. We regret the mistake, as no such use of the special dunning letter was intended by us.

PROGRESS OF YELLOW FEVER.

The fever epidemic in Jacksonville continues. The whole number of cases reported to date, September 25, is 1991, and 217 deaths. A few new cases are reported at McClenny and some other towns in Florida. Seventeen cases and 4 deaths have been reported in Decatur, Alabama; and 14 cases and 5 deaths in Jackson, Mississippi. These indications of the spread of the disease westward in the direction of the Mississippi, has greatly increased the excitement among the people of the South and Southwest, and added much to the efforts at maintaining rigid inland quarantines, some of which appear to be judicious and well directed by the Health Boards and the Superintendent of the Marine Hospital Service, while others are injudicious and wholly unnecessary.

DR. F. SIEBENMANN has qualified as Privat-Docent of Otiatry in Basle, and DR. AARON as Privat-Docent in Laryngology.

EDITORIAL NOTES.

DR. GAFFKY, of Berlin, has been appointed Professor of Hygiene in Giessen.

LAUSANNE, it is thought, will soon have a complete University, as the funds have been guaranteed.

LIEBERMEISTER, of Tübingen, Riegel, of Gies-sen, and Quincke, of Kiel, have been proposed for the chair of special pathology and therapeutics in the University of Bonn, made vacant by the death of Professor Rühle.

HEADACHE FROM INTRANASAL DISEASE. — JOAL reports two cases that confirm the opinion of Mackenzie, of Baltimore, that one of the factors in the production of nasal disease is excitation of the sexual apparatus. In the *Revue Mensuelle de Laryngologie*, of July, 1888, Joal discusses some of the headaches that occur about the time of puberty. Hack claims that these headaches are due to intranasal disturbance, and his opinion is well supported.

DRAINAGE IN PUERPERAL PERITONITIS. — WOODWARD reports (in the *Boston Medical and Surgical Journal*, of July 12) a case of puerperal peritonitis that he saw about six weeks after labor. There was an extensive accumulation of pus in the abdomen, an abscess that had been circumscribed having burst into the abdominal cavity about 36 hours before labor. Laparotomy was performed, offensive pus evacuated, the cavity irrigated with hydronaphthol, 1-1100, and a drainage tube and antiseptic dressing applied. The cavity was repeatedly irrigated with boiled water. The patient recovered.

CASATI'S MODIFICATION OF ALEXANDER'S OPERATION consists in making a single transverse incision through the skin, somewhat curved, with its concavity upward, thus uniting the two external rings. The round ligaments are then drawn out and shortened by excision of the redundant portions. The proximal end of each cord is then stitched to the distal end of the opposite one, thus forming a cross, which is united to the subjacent cellular tissue by a continuous catgut suture. The outer wound is closed with silk. The uterus is supported by vaginal tampons. This modification seems to be unnecessary, and the making of a comparatively complicated operation out of a very simple one.

SOCIETY PROCEEDINGS.

American Surgical Association.

Annual Meeting, held in the Main Hall, Grand Army Building, Washington, D. C., September 18, 19, 20, 1888.

TUESDAY, FIRST DAY—MORNING SESSION.

The Association was called to order at 10 A.M., by the President, DR. D. HAYES AGNEW, of Philadelphia.

The first business was the delivery of the President's Address. (See page 453.)

DR. JOHN ASHHURST, JR., then read a paper entitled

A CONTRIBUTION TO THE STUDY OF EXCISIONS OF THE LARGE JOINTS.

The following is an abstract:

The remarks which follow are based upon the records of 120 cases in my own practice, in which excisions of the larger joints have been required, and will refer particularly to the operative method, the after-treatment, and the functional value and limitation of applicability of excision in the case of each articulation. The 120 cases embrace 4 of shoulder-joint, 19 of elbow-joint, 40 of hip-joint, 51 of knee-joint and 6 of ankle-joint excision.

Shoulder-joint.—My four shoulder-joint excisions have all terminated successfully. They all occurred in adults, three times in young persons, and once in an old person. The only case of special interest was that of a young married woman, æt. 30, admitted to the hospital in a very prostrate condition, with acute necrosis of the left humerus and consequent pyarthrosis of the corresponding shoulder-joint. The upper half of the humerus was removed at the first operation, and twenty-four days afterwards the entire remaining portion of the bone, including the condyle, the only osseous tissue left being a thin shell of small extent which adhered to the periosteal sheath on the inner surface. The patient recovered rapidly, and acquired a surprising amount of use of the affected limb, and the increasing firmness showed that at least partial reproduction of bone was occurring. With the elbow supported the patient could use her wrist and hand with considerable freedom.

In excising the shoulder-joint, or, more strictly speaking, the head of the humerus, for the glenoid cavity rarely requires more than superficial scraping or gouging, I have employed the method by a single longitudinal incision. I have endeavored to avoid wounding the tendon of the long head of the biceps, but when the parts are matted together by long-standing inflammation, the tendon is difficult to recognize and is often not seen until it has been severed.

In the after-treatment I attach much importance to the use of the well-known cushion devised by Prof. Stromeyer. It keeps the elbow out from the trunk, thus insuring the close application of the sawn humeral shaft to the glenoid cavity, and enables the patient to sit up or lie down at pleasure, without disturbing the dressings.

The functional utility of the limb after excision of the shoulder-joint is, upon the whole, quite good. The operation, although seldom called for in civil practice, should be adopted without hesitation in suitable cases, such as those of suppurative arthritis, caries and necrosis, in which the indication for the operation is found either in the pain or in the exhaustion from profuse purulent discharge. For plastic or rheumatoid arthritis or for simple ankylosis, the operation is not to be recommended, for the mobility of the shoulder compensates measurably for the stiffness of the joint, and the gain which would be obtained by operation is not sufficient to justify the risk.

Elbow-joint.—Of the 19 cases of excision of the elbow-joint six have terminated fatally. Two adults died within five days from traumatic gangrene following injuries so severe that amputation would have been the better operation; one died of delirium tremens; two from tubercular meningitis; and one, an old man, from exhaustion in the course of the fifth week.

In excising the elbow-joint, I employ a longitudinal incision on the inner side of the articulation, taking care not to wound the ulnar nerve and to retain the attachment of the biceps. As a rule, all the articulating surfaces should be removed, and, within reasonable limits, the more bone that is taken away the better, since flail-like union is less to be dreaded than ankylosis.

For the after-treatment I employ a somewhat obtuse-angled, internal splint (Physick's splint), well padded and protected by oiled silk. As bony union is to be avoided, it is not necessary to use a splint to render the part immovable. As soon as the external wound has become solid the splint should be abandoned and the arm kept in a sling.

The functional result of a successful excision of the elbow is more nearly perfect than that of excision of any other articulation. Cases which justify the operation are those of destructive or gelatinous arthritis, caries, necrosis, compound dislocation or fracture not so severe as to require amputation, and even simple ankylosis.

Hip-joint.—I have forty times resorted to excision of the hip-joint in 37 patients. Twice have I excised, at intervals, both hip-joints in the same individual, and once have I had recourse to re-excision in a case in which recurrent caries and recontraction followed some months after the patient left the hospital. This case terminated fatally from suppurative osteomyelitis and septic peritonitis at the end of a fortnight. Both cases of double excision did well. Of the 40 operations

28 have been followed by recovery, 11 by death, and one is still under treatment. Of the 37 patients 25 have recovered and 11 died. Should the patient now under observation die, the mortality rate will be, as regards operations, 30 per cent.; as regards individual patients, 32.4 per cent.; a better showing than the results given by most statistical writers.

The incision employed begins with a straight cut in the direction of the fibres of the gluteal muscle, curves around and behind the trochanter and terminates again in a straight cut corresponding to the axes of the femur. While affording free exposure to the joint, it necessitates but little transverse division of muscular fibres. The head of the bone may be made to protrude and removed with the chain saw, or under other circumstances divided by a small saw *in situ*. It is my custom to remove both trochanters and round off the sawn end of the femur.

In the after-treatment I keep the limb well adducted with simple weight extension, with lateral support by sand bags. As soon as the external wound has become solid and the patient can control the motions of the limb, he may be allowed to get about on crutches.

The functional result of hip-joint excision must be somewhat differently judged from that of excision in the case of other articulations. In most instances the operation is performed only when death seems threatened by profuse suppuration or its consequences, and if the patient is relieved of pain and restored to a fair state of health and comfort, the treatment is amply justified. At the Children's Hospital, in Philadelphia, where 20 of the 40 operations were performed, the rule is not to operate except in otherwise hopeless cases and hence our recoveries represent so many lives saved, but in many cases excision not only saves life but restores the patient to the active duties of existence. In 13 of the 28 cases the patient obtained a useful limb, and in two of these the utility is qualified as perfect. The condition which most often calls for this operation is "hip-disease." I consider the operation suitable in certain cases of gun-shot injury. For uncomplicated ankylosis it is not to be recommended, simple osteotomy being here a safer and surer method. Where ankylosis co-exists with extensive caries or necrosis, excision may properly be resorted to. I am afraid that the "age limit" for hip-joint excision must still be maintained; in the case of the knee, I have ventured to extend the benefits of this conservative procedure to adults and even to middle-aged persons, and with great success; but excision of the hip-joint becomes an operation of great and rapidly increasing gravity when once puberty is passed. Thus while I count twenty-five successes and only four deaths in persons under 15 years of age, I have had only three recoveries and no less than seven deaths, in those older. In adults the

operation should only be undertaken with a clear understanding of the very great risks by which, under the circumstances, it is attended.

Knee-joint.—I have performed 51 excisions, in 50 patients, once having employed a re-excision for ankylosis with recurrent deformity, in a case in which I had excised the joint nine years before. Once I amputated the thigh ten weeks after excision, on account of beginning failure of health, and a good recovery followed. Of the 51 cases, but 5 have ended fatally, a death-rate of less than 10 per cent.

In excising the knee-joint, I have uniformly adopted the single transverse incision and have invariably removed the patella. The bone sections are commonly made with a butcher's or bow saw. I take particular care to remove all of the diseased synovial membrane, as well as all particles of carious bone. In treating the large bursa beneath the quadriceps muscle, I have endeavored to hasten the cure by making a long incision in the outer side of the limb and either dissecting the bursa out bodily, or scraping away its lining membrane with a sharp curette. If foci of softened and carious bone are found beyond the points at which it is safe to use the saw, I remove them with the gouge, and if necessary cut a channel through the osseous wall in such a way that the part may heal firmly without leaving a sinus.

In the after-treatment I employ a bracketed wire splint, which while firmly fixing both thigh and leg, enables the limb to be dressed as often as is needful without causing the patient pain. I have left the limb on the splint as long as six or seven weeks. After bony union is well advanced and the external wound is almost healed, I substitute a simple posterior splint or gutter of paste-board. I think it important to use means of mechanical support for at least six months, particularly with children.

The utility of the limb after successful excision of the knee is very great. The limb is stiff and slightly shortened; the foot is sometimes a little inverted, but the limb is strong, painless and enduring, and enables the patient to lead an active, useful life. As a substitute for amputation, and it is as such that I employ it, the merits of knee-joint excision cannot be gainsaid.

The cases in which excision of the knee-joint is indicated are chiefly those of arthritis, particularly of the variety for which years ago I suggested the name gelatinous; of caries; of neglected epiphysitis, etc. The operation may properly be performed in ankylosis with deformity, and also in certain instances of wound of the articulation where the extent of the injury is limited. In most traumatic cases, however, I believe that where any operation is called for, amputation will be found preferable.

Ankle-joint.—I have resorted to this operation six times, although about as often I have removed

the astragalus without interference with the tibia and fibula. Two of the six cases proved fatal from phthisis, one four months and the other nine months after operation. My impression is that this operation in itself is attended with very little risk.

In excising the ankle-joint I make an external incision curving around behind and below the outer malleolus and carried forward as far as can be done without endangering the extensor tendons, and prolonged upward as far as needful in the line of the fibula. A second smaller incision is made longitudinally over the lower end of the tibia. It is usually desirable to remove the whole astragalus. This is perhaps the most tedious and difficult of all excisions, and the operation may be facilitated by rendering the part bloodless by the use of the Esmarch apparatus. The ankle-joint is the only joint, with the exception of the wrist, in the excision of which the use of this apparatus seems to me to be desirable.

Some years ago I devised a bracketed splint for the after-treatment of ankle-joint excisions. This answers a good purpose. If antiseptic dressings are used, however, the part usually requires so little disturbance that a simple posterior gutter of pasteboard, supplemented by a fracture box, will be sufficient. The foot should be kept at right angles with the leg.

The cases which seem to me to call for ankle-joint excision are those of compound fracture and dislocation, less severe than to require amputation, and those of localized caries and arthritis, in which there is no suspicion of general tuberculous infection.

The large majority of my excisions have been performed without any of the so-called "antiseptic precautions," and the wounds have been dressed with simple oiled lint or with lint saturated with dilute alcohol. For more than a year past, however, I have employed the antiseptic method in almost all my large operations, using also antiseptic dressings in their after-treatment, and I think with benefit; though I am obliged to say that as regards the ultimate welfare of the patients, I have not noticed any gain. My best series of consecutive successes have been obtained under old methods, and I have not obtained any diminution of mortality by the adoption of the new. At the same time, I have seen no ill results which could be attributed to the use of antiseptic measures; their use shortens the period of convalescence, and they have the merit, on account of the infrequent change of dressings needed, that they greatly lessen the surgeon's labor. I know of no cases which require more personal and unremitting attention than those of excision, and it is an unquestionable advantage to be obliged to dress a wound only once a week, or every other week, instead of daily or every other day.

What will be the future of the operation of articular excision? The brightest triumph of con-

servative surgery in the hands of Fergusson and his successors,—will it keep its place? or, as some of our more enthusiastic brothers prophesy, will improved methods of dealing with joint disease in its early stages, make excision a matter only of surgical history and of antiquarian investigation? It seems to me that as the introduction of excision did not enable surgeons to abandon amputation for articular lesions, so improve treatment as we may, and educate the public as we may as to the necessity of being treated early, there will always remain a class of cases in which only by sacrificing a part, can we hope to save the whole, and in which excisions of the larger joints will therefore still be resorted to by judicious and conservative practitioners.

DR. LEWIS A. SAYRE, of New York: The paper of Dr. Ashhurst has so thoroughly covered the ground that very little is left to discuss. In excision of the hip-joint I have been in the habit of using the wire cuirass for the reason that it permits the carrying of the patient into the open air, an object not readily attained when the patient is kept in bed with the ordinary apparatus. In regard to the antiseptic treatment which I practice entirely, I think that I may claim that I have used it, without knowing it, from the time that I commenced practice of surgery. I think that my success has been largely due to the practice of pouring into the wound Peruvian balsam, which, from the creasote it contains, is an excellent antiseptic. I have also always arranged for thorough drainage. When I practiced my first excision in 1854, the operation was universally condemned. Some seem to now be going to the other extreme and performing excision of the hip-joint too early, before a thorough trial of local and general treatment has been employed.

DR. R. A. KINLOCH, of Charleston: There is now no disagreement so far as the general question of excision is concerned, but there are still some important questions to be considered. In the first place, the distinction of traumatic from pathological cases amenable to operative procedure; and in the next place, as regards the joints which are apt to do best in connection with excision for traumatic and pathological processes. A consideration of the age and surroundings of the patients is of importance. Probably the best results follow excision in connection with shoulder-joint cases for traumatism. In connection with gelatinous inflammations of the elbow-joint I have had satisfactory results even where all the material could not be removed.

I feel sure that if a few of the principles of so-called antiseptic treatment—cleanliness, thorough drainage and absolute rest, are adopted, many of the details may be omitted.

DR. T. F. PREWITT, of St. Louis, insisted on the necessity of getting cases of excision in broken down children out of doors as soon as possible.

DR. F. S. DENNIS, New York, called attention to cases of excision of knee-joint for disease beginning in abscess in the condyle. In these cases the abscess cavity breaks down after recovery, leading to the production of deformity. In these cases he takes away all of the abscess cavity, saws away a corresponding piece from the tibia, and brings the oblique surfaces together.

He has been in the habit of employing antiseptic dressings, removing the drainage-tube on the third day, allowing the first dressing to remain five or six weeks. In excision for injury only enough bone to allow of free drainage should be removed.

SIR WILLIAM MACCORMAC, London: He had heard with some surprise that the tendency seemed to be to postpone excision of hip-joint until all other measures had failed. This is not the position in regard to any other joint. In England the disposition is to perform the operation at an earlier period. Another point that he had not heard mentioned in the paper was in reference to the performance of operation in cases of old dislocation of the joint. He had performed this operation with success in old hip-joint dislocation, and reported the case of a sailor coming under observation three years after the occurrence of dislocation of hip-joint which had not been reduced. After the operation he could use the limb perfectly. He had been much interested in the recommendation of Dr. Ashhurst that a long incision be made to reach the subcrural bursa, a suggestion which he had not heard mentioned by any other surgeon.

DR. E. M. MOORE, Rochester, had been somewhat surprised to hear a certain amount of indifference expressed towards the use of antiseptic surgery. He had found in his practice the greatest improvement follow the use of antiseptic dressing in these cases of excision. He cited several cases showing the result obtained.

DR. JOHN E. OWENS, Chicago: He agreed as to the value of the wire cuirass, and referred to a modification of this apparatus consisting in the substitution of a frame of gas-pipe conforming to the outline of the body. On this the body is supported by means of flannel stretched between the two sides of the frame. Extension may be applied, if desired, by the use of adhesive plaster, counter-extension being provided for by elevating the foot of the frame. After keeping the patients in bed for thirty days, he tries to get them into the open air. He had found great advantage in keeping up a certain amount of extension after the patient was allowed to get up. By removing pain this enables the patient to move the joint more freely, and thus tends to favor greater mobility of the part. He thought that there was no comparison between the antiseptic methods and those formerly employed.

DR. FRED. LANGE, New York, referred to a class of cases in which the disease of the hip began

in the tissue outside of the joint, the articulation becoming involved at a later stage of the affection. In these cases he recommended early operation, with the hope that in this way necessity for opening the joint would be avoided.

(To be concluded.)

Obstetrical Society of Philadelphia.

Stated Meeting Thursday, September 6, 1888.

J. C. DACOSTA, M.D., IN THE CHAIR.

DR. WM. GOODELL read a paper entitled

A YEAR'S WORK IN OÖPHORECTOMY.

During the year 1887 he had had nineteen cases with one death; but including ten cases he had since had, there was only one fatal result in twenty-nine cases. The cause of death in this fatal case was uræmic coma from suppression of urine. How far the administration of ether was to be blamed for this renal complication he was not prepared to say, but he was inclined to think that chloroform was not so liable to cause congestion of the kidneys. The operation was performed for diseased ovaries and tubes, which were greatly crippling her.

The eighteen successful cases were performed for the following reasons and with the following results: Uterine fibroids, cured, 5, improved, 1; menorrhagia and ovaralgia, cured, 2, improved, 1; ovaralgia, cured, 3, improved, 1; epilepsy, improved, 1; hystero-neurosis, cured, 1; insanity, unimproved 2; pseudo-muscular hypertrophy, unimproved, 1.

In his experience the removal of the ovaries for uterine fibroids is almost always followed by a cure, that is to say menstruation ceases, the tumor rapidly lessens in size and no further inconvenience results from bulk pressure.

Of the three cases of menorrhagia associated with ovaralgia, the lack of complete success in one was due to the fact that only one ovary could be removed. The other ovary was so matted in organized exudation as not to be distinguishable.

The failure in one of the cases of ovaralgia was due to the persistence of menstruation after a thorough extirpation of both ovaries. This is a very rare result, but it will occasionally happen. Menstruation usually ceases in these cases after the lapse of a few months.

In the case in which the ovaries were removed for epilepsy, the result has not, thus far, been a cure, but the attacks come at longer intervals. Hardly time enough has elapsed for the woman to reap the full benefit of the operation, for she still has regular catamenial molimina accompanied by bloody expectoration.

Time enough has not yet elapsed to decide whether the two insane patients will be improved

or be cured by the operation. Each one was an invalid and each one became physically well, but not mentally so. In Dr. Goodell's experience, which has not been a small one, those cases which exhibit aberration of intellect only during the menstrual periods, will almost always be cured by the removal of the ovaries. But cases of insanity in which the hallucination are continuous, yet much exaggerated at the catamenial periods, are by no means so likely to be cured by the operation, although they are generally very much improved. In any case about two years time must elapse before the nerve perturbations of this artificial change of life wholly disappear, and a cure should not be expected before that lapse of time. What is true in mental cases and in purely nervous ones, is also true in a measure where even coarse lesions of the ovary are found. Hence the surgeon must not look for full results, or for complete freedom from groin aches and pelvic pains, directly after the removal of even diseased ovaries and tubes. He must wait patiently for the ovarian nismus or habit to cease, until in fact the menopause has been wholly and fully established in every way.

In the foregoing nineteen cases, the spray was not used, but every other antiseptic detail was carefully carried out. The pedicle was tied with silk; the wound was closed by the same material, and dressed with gauze dipped in a glycerole of carbolic acid. Drainage was employed but once and that in the fatal case, but this had nothing to do with the issue. Eleven of the cases were treated at his private infirmary, seven at the Hospital of the University of Pennsylvania, and one at the patient's own home.

DR. H. A. KELLY liked the moderate tone of the paper just read. He believed that here, as in other fields of work, that we must be often satisfied with relative results. He liked the term "Ovaralgia" now better than he once did. Until we are better able to differentiate the exact nature of the lesion in some of these cases, he thought the term "ovaralgia" used generically is a good one.

He had a rare case of salaam convulsion, which had been treated for a long time. He had been called in to decide the advisability of an operation, and had refused to remove the ovaries. Two years later the ovaries had been removed and the patient cured. There did not seem to be any distinct connection between the pelvic and general condition.

DR. M. PRICE asked Dr. Goodell if in these operations he had ever noticed on ligation any change in the number of the "heart beats." He had several patients, in whom, on the evening of the day of operation he had found the pulse as low as 48. He had noticed somewhere that an operator found a drop of the pulse from 80 to 35 on ligating the ovarian nerve. Since then he had

had the pulse beats counted on a number of patients at the time of the ligation, and had found a drop of only 4 or five beats at most.

DR. J. PRICE said that Dr. Johnston, of Danville, Ky., had dwelt on the matter of slowing of the pulse very fully. He thought that the explanation of continued pain after an operation was to be found in the adhesions of the intestines, etc. Some of his most satisfactory results had been obtained in cases of extensive adhesions. In a recently reported case the patient had complained of agonizing abdominal pain. An adherent omentum and a knuckle of intestine had been separated, and complete relief obtained. He had operated on a number of cases where the only lesion found was a general adhesion of the whole mass of intestines. He had thoroughly separated them and had obtained most satisfactory results. Mr. Tait has repeatedly reoperated to free adhesions. He felt that operation for nervous disturbances was of very doubtful benefit, and he never operated unless he found actual disease. He preferred handing the patient over to others.

DR. M. PRICE related a case in which the whole trouble was due to adhesions. It was supposed to be a case of gall-stones. No disease and no gall-stones were found, but the intestines were matted together, the adhesions were released, and no pain was felt afterwards.

DR. JOSEPH HOFFMAN: Dr. Price has referred to the lowering of the heart-beat after application of the ligature. In a case of his own the pulse, which on the day of operation, before ether had been given was 120, had gone down in a few hours after the operation to 58; after ten days it crept up to 80. This low register of 56 to 58 was sustained even in spite of the temperature being 101° and 102°.

DR. B. C. HIRST had operated on a case in which a small portion of one ovary was left. The case had ceased menstruating even in spite of the part left behind. A stitch had passed through the remaining piece.

DR. W. S. STEWART wanted to know the effect of removal of both ovaries on menstruation. If at the time it should occur, there were any evidences, such as acceleration of the pulse, etc., as seen at the menopause.

DR. WM. GOODELL had referred to the point suggested by Dr. Stewart in his paper, and he said that just such symptoms appeared in these cases as appeared after the natural menopause. The full results were not obtained until after these ceased. He had never noticed a fall in the pulse beats as referred to, but he had often seen serious collapse follow the pinching of the ovary. He had seen the pulse fall to 97°, and in one case below this. He thought that a counterfeited aneurism was by no means an infrequent symptom of ovarian disease. He had had a patient from a

distance suffering from ovarian enlargement, aortic pulsations, and other nervous disturbances, for which he prescribed. Afterward a local surgeon insisted that she had aneurism. A second examination convinced him that such was not the case. This was afterwards made evident by her passing through an exceedingly difficult confinement safely. There are two conditions in which he was willing to operate for the removal of the ovaries although he found no disease. One is *epilepsy*, the other is *insanity*, for in these cases a woman should never conceive. He believed that the State should interfere to prevent men and women who suffer from epilepsy or insanity from getting married. Indeed he is not sure that the day may not come when by act of legislature an insane man will be castrated and an insane woman will have her ovaries removed. He has had a good deal of experience with removal of the ovaries for insanity and has had some happy results, on the other hand, he had been disappointed at times. In cases of epilepsy he had not had so much experience. He wished that gentlemen who have had such cases would report them.

DR. C. M. WILSON had had three cases such as spoken of by Dr. Goodell. In two the result was negative. One patient was apparently benefited for some months, but recent reports say there is a gradual relapse into the former condition.

DR. H. A. KELLY had, about three years ago, operated on a girl with a brachial paresis, resulting from infantile palsy, with, also, epileptic attacks, pre- and post-menstrual in character. For some months there was no improvement but lately she has become better. Dr. Kerlin had remarked to him that if in a good many of these cases of hopeless idiots operation were performed removing their respective organs during the period of active growth, they would not develop some of their worst features and would be more easily managed.

DR. J. M. BALDY had a case, which at the time of operation looked like true epilepsy. There was excessive pain, vaginismus, and other symptoms. The pain was relieved, but not the vaginismus, for which a subsequent operation was performed. The epileptic attacks had continued. They were, however, becoming much less frequent than formerly. Some two years had now elapsed.

DR. J. PRICE operated on a patient with double pyosalpinx and epilepsy at the menstrual period and at no other time. The recovery was complete and the relief absolute. Some months after she went to another institute complaining of pain and was again opened. He wished to know whether or not in these cases convulsions come on during the period in which the patient is in bed after the operation.

DR. JOSEPH HOFFMAN had a case of three months' standing, which suffered from hæmato-salpinx and suppurating appendix. The patient

had been having epileptic attacks. She had been entirely free from them since the operation.

DR. W. S. STEWART said that he did not think that the ovaries should be removed in all cases of epilepsy, as suggested by Dr. Goodell. He had an epileptic patient whom he had confined several times and whose children showed nothing wrong about the intellectual development. He had removed the ovaries of a woman suffering from epileptic seizures and she had received no benefit from the operation. She is now in an insane asylum.

DR. GOODELL said that there was no disease so likely to be inherited as epilepsy and insanity. If Dr. Stewart lived long enough he would find the children referred to develop the disease.

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Use of Gray Oil in Syphilis—Tuberculosis of the Iris—Use and Application of Hyoscin—A New Austrian Pharmacopæia.

At a recent meeting of the Imperial Royal Society of Physicians of Vienna, Prof. v. Lang read an important paper on "The Use of Gray Oil in Syphilis." It was known that the metallic mercury, such as was contained in the gray salve and the gray plaster, had a very powerful influence on syphilitic affections. As, however, the subcutaneous injection of mercurial preparations had undeniable advantages over any other method, owing to its commodity and on account of the fact that it permitted an exact dosage of the quantity of mercury to be used, the author had endeavored to find out a preparation which contained the mercury in the same form as in the gray salve, and which could at the same time be used for subcutaneous injections. After repeated trials, Prof. v. Lang arrived at the following formula:

Hydrargyri	aa 3 parts.
Lanolini	4 "
Oil of olives	4 "

The preparation under consideration contained 30 per cent. of metallic mercury, and from 0.1 to 0.15 cubic centimetres of this oil were, in general, injected during an interval of from five to eight days. After the lapse of some weeks, the injections were discontinued for some weeks, and so on, until about from 1.5 to 2 ccm. of the gray oil were used. Prof. Lang stated that he had obtained excellent results with the injections of the gray oil. The good effect of this way of anti-syphilitic treatment especially became manifested in the case of syphilis of the nervous system, where the symptoms subsided in a proportionately

short time. There were no bad after-effects. When the technique of the injection was exactly observed, and the gray oil prepared in a convenient way, one could be sure that the reaction after the injections would be but very slight. The author and his assistants had but very seldom observed the presence of stomatitis. He had used the preparation in question for the last four years, and had to discontinue this treatment for only five times. The advantages in the use of the gray oil consisted, first, in the fact that only a small quantity of mercury had to be injected; secondly, in the possibility of an exact dosage, which was not the case in the use of the gray salve.

The indications for the use of the gray oil were quite the same as those for any mercurial treatment. The mercurial oil also admitted of a larger local application than the gray plaster; it could very advantageously be applied to gummatous cavities of the bones, and also to syphilitic processes in the nose, the pharynx, the ears, the larynx and the eyes.

Professor Fuchs showed a rare case of tuberculosis of the iris. The patient was a girl $6\frac{1}{2}$ years old, and many of the family were the subjects of tuberculosis. The patient herself had successively suffered from measles, small-pox and scarlet fever; an inflammation of the eye of a tuberculous character occurred after the latter. The patient was well developed, and no abnormality could be proven to be present in the lungs. The cornea of the right eye was dim, and precipitates could be discovered at its posterior surface. The pupil protruded much outward, and its internal side was for the greatest part covered by a tumor which reached as far as the cornea. The tumor itself was composed of numerous small nodules of a gray-red color. This form of the tuberculosis was very rare and, in the strictest sense, it could neither be reckoned to the disseminated or the conglomerated tubercles of the iris. In the first one there were in the iris many disseminated and isolated nodules of a gray color, whereas in the second form the tubercle had the appearance of a neoplasm in which the composition of nodules could only be recognized by means of a loop. The case under consideration was to be looked upon as primary tuberculosis of the iris. The lecturer suggested that enucleation of the affected eye would protect the rest of the organism against infection.

Drs. S. Krauss and Fischer, of Budapest, gave in a recent number of the *Orvosi Hetilap* (a Hungarian medical journal), some interesting details on the therapeutic value of hyoscin, and tried to clear up some divergent opinions which are existing in this respect.

Sohr, Kobert and Kühlwetter, as well as other investigators, had used hyoscin in doses of from 1 to 2 milligrams without observing any dangerous complication; it was only Erb who had ob-

served symptoms of intoxication in doses of from $\frac{1}{10}$ to $\frac{1}{100}$ parts of a milligram. As to the dangerous after-effects of this drug, and with reference to the divergent opinions which existed in this direction, Dr. Krauss explained them by the suggestion that the experimenters had availed themselves of different preparations of the drug in question. Hitherto, the hydrobromide, the hydroiodide and the hydrochlorate of hyoscin were used; at the recommendation of Kühlwetter, the hydrochlorate of hyoscin ("hyoscinum hydrochloricum") was used in the "Landes-Irrenanstalt" of Budapest, and the drug was directly ordered from Merck. A 2 per cent. solution of "hyoscinum hydrochloricum" was used for subcutaneous injections in the beginning, half a Pravaz syringe-ful, hence the dose of 0.001 gram was used. Later on, 0.001 gram was injected in the morning and the evening. The injections (altogether 90 in number) did not cause any greater pain than other drugs, and they were not refused by the patient. No bad after-effect could be discovered, neither was any serious complication observed, though the drug was used for decrepit patients. The hyoscin was applied in all irritative conditions, viz.: in acute maniacal and hallucinatory irritations, in post-epileptic attacks of frenzy, and severe paralytic irritation. There was no opportunity for ascertaining the value of the drug in the case of paroxysms in delirium of the drunkard ("delirium potatorum") and melancholia, neither in the excessive irritability of the so-called "raptus melancholicus."

From the experiments hitherto performed it became already evident that the hydrochlorate of hyoscin excelled all the other respective remedies hitherto used, owing to its excellent sedative and hypnotizing effect. Its sedative effect invariably manifested itself, and in the acute maniacal irritative conditions its influence was even quite surprising. The patient who just before was in a condition of the highest hyperkinesis became quite paralyzed after one injection, and after the lapse of from six to ten minutes, or at the latest after fifteen minutes, the muscles entirely lost their function, and this condition, which bore a resemblance to the state of deep drunkenness, lasted for about twenty minutes, when the patient fell into a sleep of the duration of about from two to four hours. After awaking the patient remained quiet (tranquil) for about six hours. In the case of paralytics the effect was not so striking. The individuals attacked with mania broke down after the injection, as if they were thunder-struck, whereas the paralytics became only gradually more quiet, and in some cases they became affected with an amœnomaniacal humor. It had still to be mentioned that the hyoscin was used in such irritated patients in which the usual drugs, such as chloral, morphia, paraldehyde, either had no effect at all or only a little influence. Also in

patients suffering from agrypnia, and where the hypnotics, except paraldehyde, were not attended with any success, the hyoscin, in the dose of 0.001 gram, produced undisturbed sleep of from five to six hours' duration, though it at the same time gave origin to a little degree of giddiness and nausea. Paraldehyde was very ill supported by the patients, owing to its disagreeable taste and smell; moreover, it was very dear, and did not permit of an extensive application.

Appearances of intoxication did not occur one single time; circulation and respiration remained normal. Vomiting occurred once. The authors could not share in the opinion pronounced by Kuhlvetter, viz.: that hyoscin could be administered only to robust individuals, as they had prescribed it to anæmic and emaciated patients without any harm. It was administered ten times to patients who, for several years, had suffered from tabes and progressive paralysis.

Hyoscin had no influence on the temperature, and the eye-pupils, in most of cases, did not undergo any change.

From all the observations now referred to it became evident that the excellent effect of hyoscin was beyond any doubt, and that it could not be compared with any of the sedatives hitherto known. The influence of chloral hydrate, as was known, was uncertain, and especially failed to manifest itself in the case of much irritated paralytics, and, on the other hand, its dosage could not be exactly determined. On one occasion 2 grams were not sufficient, and on another occasion this dosage was too large and attended with symptoms of intoxication. Moreover, it was known that in chronic psychoses which were combined with permanent irritation, the chloral hydrate was attended with several disagreeable after-effects, the least of which was that the patient became accustomed to the drug and that the dose had to be increased. Again, the use of morphia in psychical diseases was limited to only very few affections, and in most of the psychoses it was nearly without any effect, and properly exerted an influence only in the case of paroxysms of fear in melancholia. The value of the paraldehyde became impaired by its bad taste and smell, as well as by its high price. Hence, so far as we could judge from our present experience, the hyoscin had to play a great part in the therapy of the psychical diseases.

Its sure, rapid and complete effect rendered it superior to all other similar drugs; moreover, it was cheap, if we took into account the minimum doses which were required. Further experiments might detect some inconvenience, but in any case, the drug under consideration was worth being fully studied not only by the specialists, but also by the general practitioners.

The committee for the edition of the new "Pharmacopœia Austriaca" have completed their

work; the new Pharmacopœia will appear in the course of this year and become compulsory in the beginning of next year.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The College of Physicians and Surgeons of New York; the New Buildings; Changes in the Curriculum and Length of the Term—Death of Dr. Thomas T. Sabine—The Late Dr. Henry F. Quackenbos—Method of Dealing with Small-Pox—The Chimpanzee Called "Mr. Crowley," of Central Park—Fatal Dose of Chlorate of Potassium—The Visit of Professor von Esmarch, of Kiel.

The College of Physicians and Surgeons, the next session of which commences October 1, announces with satisfaction that the new group of buildings, given by the late Wm. H. Vanderbilt and his family and by Wm. D. Sloane, Esq., have amply fulfilled the high expectations formed of them as centres for improvement in medical teaching. For the session of 1888-89 and thereafter, it will be remembered, a preliminary examination is to be required of all new applicants for matriculation, with the exception of those who possess diplomas from recognized colleges or schools of science, or who can present satisfactory evidence of proficiency in the various subjects requisite for admission to the institution. With a view to elevating the standard of medical education, the Trustees and Faculty have also resolved upon important changes in the length of the session, the amount and character of the obligatory studies, the requirements for graduation, and the fees for instruction.

Beginning with the present season, the college year is henceforth to consist of a period of vacation, extending from Commencement to about the first of October, and of an annual session of between eight and nine months, extending from the latter time to the following Commencement, which will be held on or about the 15th of June. At the same time the absolute number of required didactic lectures is not to be increased; so that a greater number of hours each week will be available for other exercises. The work of all students who are candidates for the degree of M.D. will be distributed over three years of study, according to a prescribed curriculum, and as regards the requirements it is announced that candidates who are not already graduates in medicine of recognized institutions must have pursued the regular three years' curriculum at this college, or the regular curriculum of the second and third years, and such a course at some other medical school as shall have been recognized by the Faculty as an equivalent for the first year's curriculum. Graduates in

medicine of recognized institutions must have pursued at this college at least the regular curriculum of the third year, and all candidates, whether already graduates in medicine or not, must pass a satisfactory final examination in writing, which, in addition to the seven regular branches, will include "clinical studies." The examination in the topic of "clinical studies" is to comprise one question in each of the following subjects, set by the clinical professors thereof: Diseases of the mind and nervous system; diseases of the genito-urinary organs, including syphilis; diseases of children; diseases of the eye; diseases of the ear; diseases of the throat; diseases of the skin. With the exception, however, of such graduates in medicine as attend only the third year of the curriculum, candidates, if they so elect, are eligible for examination in any or all of the three branches, anatomy, physiology and physics and chemistry (and upon them only), on completing the first two years of the curriculum.

The necessary expenses for graduation, for a student who attends the curriculum during three years, are as follows: First year.—Matriculation, \$5; fee for all the required exercises of the year, \$150; anatomical material, \$1 each part.

Second year.—Matriculation, \$5; fee for the required exercises of the year, \$150; anatomical material, \$1 each part.

Third year.—Matriculation, \$5; fee for all the required exercises of the year, \$150; graduation fee, \$30.

The college has just met with a severe loss in the death of Dr. Thomas T. Sabine, who has been Professor of Anatomy since 1879, and who was a popular teacher, a skilful surgeon, and a most accomplished and genial gentleman.

The career of the late Dr. Henry F. Quackenbos, who recently died at his home in this city at the age of 69, was in many respects a notable one. Like his father, who was also a physician, he was born in New York, and both were graduates of Columbia College. He received the degree of M.D. from the College of Physicians and Surgeons in 1840, and soon afterwards went abroad, pursuing the study of his profession in London, Edinburgh and Paris. While residing in Paris he was appointed surgeon of a brigade commanded by Gen. Pellissier, afterward Duke of Malakoff, and served in the French campaign in Northern Africa against the Algerians. Returning to his native city in 1849, he distinguished himself by his heroic services while in charge of Bellevue Hospital during the cholera epidemic of that year. Dr. Quackenbos soon acquired a large private practice in New York, and his *dienste* was made up to a considerable extent of members of the theatrical profession. He was honorary physician of the New York Dramatic Fund Association from its organization, and for many years he was the medical adviser and intimate associate of Edwin For-

rest; who, it is said, if taken ill while travelling through the country, would always send for Dr. Quackenbos to attend him, however great the distance might be.

In referring to the remarkably small number of cases of small-pox occurring in New York of late, although the disease has been more or less prevalent in some of the neighboring cities and towns, Mr. Bayles, President of the Board of Health, recently made the following statement: "I believe the reason for the singular exemption of New York to be almost wholly due to the system of isolation now in use, which is wonderfully expeditious. The moment a case is reported by the physician in attendance the inspector in whose district the case occurs is at once sent to look it up, and if he has any doubts about the character of the disease he sends immediately to the central office, when one of the expert diagnosticians is dispatched to his assistance. All the district inspectors are in telephone communication with the central office, so that no time is lost; and the period that elapses between the report of the case and the removal of the patient to the hospital is frequently not more than four hours." If, as is usually the case, the patient cannot be properly isolated at his own home, he is sent at once to the reception hospital on the East River, preparatory to removal to North Brother Island, on which are now located the hospitals for contagious diseases. The bedding and other effects are removed to the disinfecting house of the Health Department, and the disinfecting corps thoroughly fumigate the entire premises. Of course, the vaccination of those exposed to the risk of contagion is also carefully looked after.

"Mr. Crowley," the intelligent chimpanzee whose wonderfully human-like actions have for several years been the admiration of the crowds visiting the zoological department of Central Park, died about the first of September. He was presented to the Park in June, 1884, by Mr. Smyth, the American Minister to Liberia, who purchased him when at an early age from a Congo negress, who is said to have suckled him at her own breast. On his arrival in New York he was only twenty inches in height, and could be readily carried in a great-coat pocket. At the time of his death he was four feet nine inches in height. Not long before this his weight amounted to 110 pounds, but illness reduced this finally to 73 pounds. A most admirable portrait of him has been made by Mr. Frank Beard, the well-known animal painter. The picture represents the chimpanzee seated in an arm-chair beside a table, with one hand holding a copy of Darwin's "Descent of Man," and the other supporting his head, while the attitude and the countenance are indicative of the most profound meditation. Two skulls are in the foreground, and the picture bears the inscription, "Strange, isn't it?"

During the four years that Crowley was at the Park menagerie he had several severe attacks of pneumonia, and the greatest possible care was always taken of him, both in sickness and health. The autopsy was made the day after his death by Dr. William Gotheil, who found the animal very badly diseased. The left lung was practically useless, and was firmly bound down by old adhesions, while there were evidences of pleurisy in the right lung, and the immediate cause of death was ascribed to congestion of that organ. Abundant tubercular deposits were found in many parts of the body, notably the liver, and there was marked fatty degeneration of the heart. There were also evidences of an old peritonitis, and the lymphatic glands were in a state of chronic enlargement. The brain, which is to be thoroughly examined by Dr. E. C. Spitzka, was entirely healthy in its gross appearances, and weighed about one-third of that of the average adult human brain. The convolutions representing the functions of speech were four in number—considerably less than in the human subject.

Both the skeleton and the stuffed skin of the dead chimpanzee are to be mounted and placed on exhibition in the admirable collection of the American Museum of Botanical History, on the west side of the Park. A new section of this institution, which will ultimately be of immense size, is now in course of erection; the legislature having last year appropriated the sum of \$400 for the purpose. In the new building there will be a handsome lecture-room, with a seating capacity of 1500. During the past year a number of important additions have been made to the Museum, including the Lawrence collection of American birds, numbering 12,000 specimens; a collection of 4000 Brazilian birds, and the Elliot ornithological library, of over 1000 volumes.

A death has been reported here from chlorate of potassium, two half ounce doses having been taken in mistake for iodide of potassium.

Among the recent arrivals in this city are the eminent surgeon, Professor von Esmarch, of Kiel, and his wife, the Princess Henrietta of Schleswig-Holstein, who is a near relative of the present Empress of Germany. They are accompanied by their son, Dr. Ervin von Esmarch. They were met down the Bay by a number of friends, and escorted to the residence of Dr. Frederick Lange; and a few days afterward a reception was tendered the distinguished party at Terrace Garden. At this entertainment the Princess presented 1200 marks for distribution among the Schleswig-Holstein poor resident in New York. P. B. P.

MEDICAL EDUCATION OF THE LAITY.—*The New York Medical Journal* in a recent editorial on this subject says: What the laity need is not to be more thoroughly instructed in medical science, but to be taught to distinguish between the true and the false, between the charlatan and the honest conscientious physician.

Reply to the Criticism of Dr. Robert Newman.

Dear Sir:—Dr. Newman says:

1st. "Is it sound logic to condemn an operation and method because a *novice* (italics mine) has made a failure in a few cases, when surgeons of undoubted standing from all parts of the world have reported hundreds of successful cases?" etc.

I treated six cases in succession by electrolysis, and not one was benefited. After such a fair trial was I justified in wasting the time and patience of my patients any further? Treating a patient two months without improvement does not add greatly to one's reputation. Have not surgeons of still more undoubted standing from all parts of the world condemned the treatment? Need I repeat their names to Dr. Newman?

2d. "Why was not the cystitis treated first?"

It would be as logical to treat an acute inflammation of the eye caused by a foreign body and then remove the foreign body, as to try and cure the cystitis first and then remove the strictures. The cystitis was a *result* of the strictures.

3d. "Had the gentleman carefully read my papers he would not have made his paper a personal attack."

I deny the personal attack statement. I simply used the name of Dr. Newman (also one other) as being the exponent of a method that I had found by experience, although at first prejudiced in its favor, to be of no value. My experience conforms also to the experience of the first genito-urinary surgeons in Dr. Newman's own city. My paper was written from a purely scientific standpoint. Persons with a hobby are apt to be very sensitive.

4th. "I . . . do not enlarge the urethra to a certain theoretical size, but mark in my statements "cured," when the patient feels and is well, passes a free, unobstructed stream, and is satisfied with his condition to such a degree that he objects to any further treatment and enlargement, and does not desire a larger-sized urethra."

I do not claim that a patient should have his urethra enlarged to a "certain theoretical size;" every patient his own individual standard as can be demonstrated with the urethrometer, but "when the patient feels well, passes a free unobstructed stream, and is satisfied with his condition." I do not by any means concede that he is cured. I make that concession only when the bulbous bougie or urethrometer fails to discover a stricture. As long as a *stricture* still remains there is the exciting cause for a gleet or cystitis. Dr. Newman apparently leaves the patient to be the judge as to when a cure is effected.

5th. "It is easier to enter the urethra with the tapering instrument than with a six-sizes larger egg-shaped bulb."

"Goodness Gracious!" and the doctor even

diagrams it for fear his readers could not comprehend so wonderful a problem. Some of us use steel sounds that are not tapering, so that the extended argument about tapering instruments is all wasted.

6th. "The next mistake Dr. Thomas makes, is in saying that some patients were discharged with their urethras admitting only a No. 14 French."

And then Dr. Newman, in the same breath, admits that one improved very slowly to No. 14 and something prevented his return. If I had more leisure time I would hunt up the record of the other case, but as the doctor drops one-half of his *casus* it is hardly worth my while to hunt up the other half.

7th. "Dr. Thomas does not state in his report of the single case, how he used the electrolysis, nor does he tell what his most approved apparatus was."

The battery I used was a McIntosh galvanic. My electrode bougies were those made by Truax & Co., and are identical, I believe, with those used by Dr. Newman. The electrode (negative) two sizes larger than the stricture was placed against the face of the stricture, the current turned on, beginning with one cell, and gradually adding cell by cell until the current was quite perceptible to the patient, and at the same time making steady but gentle pressure. Before removing the electrode the current was gradually diminished; séance lasting from fifteen to twenty minutes.

8th. "Candidly I do not envy any one who can use such language, and I leave it to my readers to surmise what animus has prompted him."

Any one reading my previous article can see at once that I was honest and after the truth—even an enthusiast. The "animus" requires no "surmise;" it is plain.

To show to what extremes some reporters may go, Mr. Editor, please permit me to give you this excerpt from a journal lying before: "Mr. H. M., merchant, æt. 28, has had stricture of the meatus and gleet for two years. This case was very slow in consequence of the *very great contraction* (Italics mine), and subacute inflammation setting in from the slightest manipulation. I finally disregarded the inflammatory condition, and with a flexible conical electrode bougie, No. 24 French, and 18 cells of a Stammers' battery, worked through, and thoroughly broke down the stricture. Quite a high grade of inflammation was set up, which soon subsided, leaving the meatus free from all contraction. . . . He has remained well up to this time (four years). This case illustrates the fact that electrolysis will substitute internal incision, even at the meatus."

Very great contraction means one of filiform calibre. To work through a stricture of this

kind with a No. 24 bougie at one sitting is almost incredulous, and under conditions when electrolysis is entirely contraindicated by the teachings of Dr. Newman. Did the electrode go through by causing absorption, or did it burn through, or did it go through *nolens volens*?

J. D. THOMAS, M.D.

Pittsburg, Sept. 12, 1888.

MISCELLANEOUS.

MEDICAL SOCIETY OF VIRGINIA.—The Nineteenth Annual Session of the Medical Society of Virginia, will convene at 8 P.M., Tuesday, October 23, 1888, in Norfolk, Va. Dr. Herbert M. Nash, of Norfolk, Va., will deliver the *Address of Welcome*. Dr. Wm. T. Walker, of Lynchburg, Va., will deliver the *Annual Address to the Public and Profession*. Subject, "Moses and other Doctors." Dr. Benjamin Blackford, of Lynchburg, Va., will deliver the *President's Address*. Subject, "The Progress of Medical Education, and the Importance of the Study of the Physical Sciences in relation thereto during School Life."

The Society will nominate to the Governor of Virginia for appointment, as members of the Medical Examining Board of Virginia, for the term of four years, beginning January 1, 1889, thirty-two regular practitioners of medicine in Virginia, as follows: Two from the State at large, and three from each of the ten Congressional Districts of the State.

The night session will begin about 7:30 o'clock with the call for reports on advances in the several departments of the medical sciences. The following order will be observed until adjournment to Thursday morning when the call will be continued until this order is completed—no paper to exceed thirty minutes in reading:

Advances in Anatomy and Physiology.

Advances in Chemistry, Pharmacy, Materia Medica and Therapeutics.—In this Section the following paper will be presented: "The Carbon Compounds—Their True Place in the Treatment of Fevers; or the Particular Forms of Fever in which They are Indicated," Dr. S. K. Jackson, of Norfolk, Va.

Advances in Obstetrics and Diseases of Women and Children.—In this Section the following paper will be presented: "Conduct of Enceinte Women before and after Confinement," Dr. Wm. L. Robinson, of Danville, Virginia.

Advances in Practice of Medicine.—In this Section the following papers will be presented: "The Uric Acid Diathesis," Dr. J. Spotswood Wellford, of Richmond, Va. "The Development of Medicine, Dr. M. A. Rust, of Richmond, Va. "The Duty of the Doctor to his Patient Suffering under Malignant Disease," Dr. William W. Parker, of Richmond, Va. "Thirty-two Years' Experience as a Country Practitioner," Dr. Charles R. Cullen, of Richmond, Va.

Advances in Surgery.—In this Section the following papers will be presented: "Exploration of the Bladder for Obscure Diseases of that Viscus," Dr. Hunter McGuire, of Richmond Va.—By invited guest, Dr. Milton Josiah Roberts, of New York, N. Y.

Advances in Ophthalmology, Otology and Laryngology.—In this Section the following paper will be presented: "Enlarged Tonsils—What Shall We do With Them?" Dr. Charles M. Shields, of Richmond, Va. "Improved Means of Diagnosis in Throat and Nasal Troubles, with Remarks on Treatment," Dr. Joseph A. White, of Richmond, Va.

Advances in Hygiene and Public Health.

Advances in Psychology and Neurology.

In addition to the above reports, by resolution adopted at the last annual session, Drs. Wm. W. Parker, of Richmond, Va., Dr. Wm. P. McGuire, of Winchester, Va., and

T. M. Bowyer, of Liberty, Va., were appointed a Committee to "Report a Record of All Deaths Known to have Occurred during the Past Five Years in this State from the Administration of Chloroform."

When this order shall have been completed, call will next be made for voluntary scientific papers, contributions and reports—titles of which have not been received in time to be assigned to any special department. All papers should be ready for immediate delivery to the Recording Secretary at the time of their presentation to the Society.

Dr. Landon B. Edwards will propose the following amendment to Section 1, Article I, of the Constitution of the Society, relating to eligibility to Fellowship, etc.: After the word "surgery"—the last word of the Section—insert, "or who has not received, in due form, the certificate of having passed a satisfactory examination before the Medical Examining Board of Virginia."

The Profession of Norfolk and Portsmouth have arranged for suitable entertainment of their guests which will be named during the session of the Society. Dr. Alex. Tunstall, Norfolk, Va., is the Chairman of the Local Committee of Arrangements for this session.

Fraternal delegates from any of the recognized regular medical societies of the country will be recognized upon presentation of their certificates of appointment as such, and will enjoy all the privileges of the Session allowed to non-resident Honorary Fellows and invited guests. It is desired that they shall participate in the scientific proceedings of the session, either by reading papers or entering into the discussions upon papers read, cases reported, etc.

PROF. DIEHL read the report on "The Progress of Pharmacy," at the Third-sixth Annual Meeting of the American Pharmaceutical Association. The following excerpt will be of interest to the profession:

"It is clearly the duty of the pharmacists to attend to the preparation, dispensing, and sale of medicine, in which event he must, or should, conform to the code of ethics of the medical profession. The renewal of prescriptions is an evil for which the physician is equally responsible. The sale of patent medicines, while it can not be avoided, need not be encouraged by the pharmacist. The physician, on the contrary, should not whimsically designate the products of special manufacturers in his prescription, and he certainly should not supply the medicines needed in his prescription if such can be filled in the locality in which he resides. The professions of medicine and pharmacy are so intimately related that they can not afford to quarrel."

The *National Druggist*, commenting on the report, says: The discussion of the report was animated and earnest and was generally participated in, especial attention being given to the points touching upon the differences between pharmacists and physicians. The opinion seemed to be general that these differences were more apparent than real, and that all that was needed to heal the breach was a closer communion with and a better understanding of each other.

DR. S. D. MCINTOSH, the well-known electrician of Chicago, has been invited by Dr. Charles N. Hewitt, President of the American Public Health Association, to attend the next meeting of the Association to be held in Milwaukee, Wis., Nov. 20, 21, 22, 1888, so that members may avail themselves of his personal services in the use of the stereopticon with sunlight or oxy-hydrogen light, for the illustration of papers or addresses. Members wishing such illustration should communicate with Dr. Hewitt, Red Wing, Dak.

THE KIRK SESSION of the Glasgow Cathedral have divided the collection, made on the occasion of the recent meeting of the British Medical Association, between the Dunoon and Lenzie Convalescent Homes.

LIST OF PERMANENT MEMBERS.—The name of Dr. I. M. Harsh, of Griswold, Ia., was unintentionally omitted from the published list.

THE NEW MILITARY HOSPITAL at Alexandria, Egypt, contains 137 beds and is built on the site of the old Light-house Fort.

THE ILLUSTRATED MEDICAL NEWS is the title of a new weekly medical journal. It is published in London and the initial number appears to-day.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from September 15, 1888, to September 21, 1888.

By direction of the President, the Army Retiring Board at San Francisco, Cal., convened by War Department order dated July 20, 1886, published in S. O. No. 168, July 22, 1886, from Headquarters of the Army, is dissolved. Par. 1, S. O. 217, A. G. O., September 18, 1888.

By direction of the acting Secretary of War, the leave of absence granted Major Alfred A. Woodhull, Surgeon, in S. O. 148, June 27, 1888, from this office, is extended fifteen days. Par. 14, S. O. 218, A. G. O., September 19, 1888.

By direction of the acting Secretary of War, Capt. Robert J. Gibson, Asst. Surgeon, is relieved from duty at Alcatraz Island, Cal., and will report in person to the President of the Army Medical Examining Board, New York City, on October 16, 1888, for examination for promotion. On completion of his examination Capt. Gibson will proceed to Ft. Trumbull, Conn., and report for duty to the commanding officer of that post, reporting by letter to the commanding General Div. of the Atlantic. Par. 13, S. O. 217, A. G. O., September 18, 1888.

By direction of the acting Secretary of War, First Lieut. Edward R. Morris, Asst. Surgeon, is relieved from duty at Ft. Thomas, Ariz., and will report in person to the commanding officer, Ft. Shaw, Mont., for duty at that post, reporting by letter to the commanding General Dept. of Dak. Par. 14, S. O. 217, A. G. O., September 18, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Two Weeks Ending September 22, 1888.

Asst. Surgeon George A. Lung, ordered to receiving ship "Vermont," Navy Yard, New York.

P. A. Surgeon A. G. Cabell, ordered to the Naval Hospital, Chelsea, Mass.

P. A. Surgeon J. W. Baker, detached from the Naval Hospital, Chelsea, Mass., and to the "Palos."

P. B. Surgeon Philip Leach, detached from the "Palos" and granted six months' leave abroad.

Surgeon M. A. Simons, detached from Naval Academy and wait orders.

Surgeon G. E. H. Harmon, ordered in charge Naval Academy.

Asst. Surgeon Geo. McC. Pickrell, detached from "New Hampshire" and to the "Ossipee."

Asst. Surgeon W. F. Arnold, ordered to the "New Hampshire."

Asst. Surgeon C. P. Henry, detached from the "Ossipee" and granted sick leave.

Asst. Surgeon F. J. B. Cordeiro, promoted to P. A. Surgeon.

Medical Inspectors J. C. Spear and A. C. Rhoades, placed on the retired list September 14.

CORRIGENDUM.

In the issue of September 22, p. 429, appears a communication on "The Ethics of Marriage." The signature should read Hunter H. Powell, instead of "Rowell."

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No. 14.

ORIGINAL ARTICLES.

SHOULD NOT THE NATIONAL GOVERNMENT DEFEND OUR PORTS AGAINST THE NATIONAL ENEMY, CONTAGIOUS DISEASE?

Read in the Section on State Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BENJAMIN LEE, A.M., M.D., PH.D.,

OF PHILADELPHIA, PA. SECRETARY OF THE STATE BOARD OF HEALTH OF PENNSYLVANIA.

To ask this question ought to be to answer it. To one who views it from the broad standpoint of a humanitarian nationalism it would seem that there can be but one response, and that an affirmative one.

The only argument which has been adduced against it is, that the power of enforcing quarantine is a police power, and as such, reserved by the constitution to the several sovereign States. I confess myself, unable to find any such reservation. On the contrary, Section 8 of Article I, of that immortal document, declares that "Congress shall have power to provide" not only "for the common defence" but for the "general welfare of the United States," "to regulate commerce with foreign nations," and "to make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this constitution in the government of the United States or in any department or officer thereof." More than this, the several States are expressly forbidden to "enter into any agreement or compact with a foreign power." Now, I am quite willing to grant that the enemies against which a "common defence" is thus guaranteed, are the armies and navies of foreign nations and not bacilli or cryptogams, although in a more highly advanced state of civilization a liberal interpretation might even include these latter more formidable foes; but I ask:

First. What possible interest is there which more nearly concerns "the general welfare" than the protection of the entire nation from the introduction of pestilence from abroad?

Secondly. How is it possible to administer quarantine relations without, to a greater or less extent, often to a very serious extent, interfering

with the "commerce with foreign nations," from which the States are expressly bidden to keep hands off? and

Thirdly. In what way can such a reciprocal understanding be arrived at between the government of any State, still less of any City, and foreign governments, as the rapidity and immensity of modern intercommunication makes absolutely essential if the transportation of contagions is to be brought under control, when the said State and municipal governments are forbidden in so many words "to enter into any agreement or compact with a foreign power?"

Internal hygiene, the making of all laws which shall promote health, protect life, and prevent the transportation of contagion within the limits of each State, this certainly is a right reserved to each State by exclusion; but when it comes to the question of common defence against a common enemy from without, which more persistently and terribly than any other, threatens the "general welfare," an appeal to the constitution appears, both by analogy and by literal construction, by the letter as well as by the spirit, to lead to but one conclusion, viz., that this latter power inheres in the general government.

This question has, however, been practically decided by Congress, in placing a fund at the disposal of the President, to be used at his discretion in taking measures to prevent the introduction of contagious diseases in especial emergencies, in assigning to a subordinate Bureau of the Treasury Department the duty of establishing quarantine stations at certain points under certain conditions, and of requiring the consular representatives of the nation to report the progress of contagious diseases in foreign countries to that Bureau.

We may, therefore, consider that objection as finally tabled, and proceed to discuss the question whether the National Government, *having the right* to assume control in this matter, is not *in duty bound* to exercise it. In considering this subject I shall not scruple to avail myself of the admirable work already done, contained in the following papers, viz: "Practical Recommendations for the Exclusion and Prevention of Asiatic Cholera," an address delivered by Dr. John H. Rauch, Secretary Illinois State Board of Health,

before the National Conference of State Boards of Health at St. Louis in October, 1884; "Coast Defences against Asiatic Cholera," a report of an Inspection of the Atlantic and Gulf Quarantines between the St. Lawrence and the Rio Grande by the same author; "Report of the Committee of the College of Physicians of Philadelphia, appointed to investigate the efficiency of our Quarantine arrangements for the exclusion of Cholera and epidemic diseases," an Editorial Article from the *Medical News*, of Philadelphia, Nov. 5, 1887; An Address from a Special Committee of the College of Physicians of Philadelphia to the Medical Societies of the United States, concerning the dangers to which the country is exposed by the ineffectual methods of Quarantine at its Ports, and in regard to the necessity of National Control of Maritime Quarantine; and a "Report of the Committee on Epidemic Diseases" of the Senate of the United States.

If it should be found on investigation that, under the system which leaves the management of quarantine to local authorities, whether State or civic, every quarantine station without exception has been generously supplied with everything necessary in the way of extensive grounds, so situated as to make isolation easy and complete; of commodious buildings for the reception, detention and observation of suspects, and well-arranged and ample hospitals for the treatment of the sick; of establishments and apparatus for the complete and rapid disinfection of both effects and vessels; we might conclude, simply from a sanitarian standpoint, that federal interference was uncalled for. If, on the other hand, we find that, except possibly in a single instance, not one of these conditions has been discovered to exist, we are forced to the conclusion that neglect of this duty on the part of the government is longer inexcusable; and if, moreover, we find that in the mature opinion of some of the ablest sanitarians and physicians in the country, it is impossible from the very nature of things that these favorable conditions could invariably be presented under State and local management, such neglect becomes a folly and a crime. In reference to this last point, Dr. Rauch says:

"With two or three exceptions, no port in the United States has adequate facilities for the proper administration of quarantine. Such a system as was inaugurated by the National Board of Health, and which is the only quarantine contemplated in these remarks, involves the removal of an infected or suspected vessel out of the track of commerce; the segregation of her sick from the well; the proper care and shelter of both these classes; the necessary disinfection of infected cargo, and the purification of the vessel; and the release of vessel, cargo and persons, so soon as they have been rendered safe and free from the danger communicating disease.

"This is very different from a mere quarantine of detention. It is the American quarantine of sanitation, a common sense quarantine, which aims to prevent the introduction and extension of contagion, not by merely arresting it at a given point and there leaving sick and well at its mercy until, the susceptible material having become exhausted, no more cases of the given disease occur; but by removing the susceptible at once from its influence, and then destroying it and the conditions necessary for its existence by scientific methods of disinfection and purification.

"To do this, however, requires a quarantine plant and facilities far beyond the means of any but the largest ports, supported either by abundant quarantine fees or by adequate appropriations from the State or municipality. But cholera may obtain access at a small port as well as a large one, and hence the necessity for the Refuge Stations above indicated."

And later in the same address, "Sooner or later the National Government will be compelled not only to assume supervision of exterior quarantines, but to provide for a permanent system of coöperation with State and local governments in the administration of inter-State sanitation; in order, on the one hand, to prevent the introduction of exotic epidemic diseases, and, on the other hand, to prevent their spread from State to State along the great international highways of travel and commerce. *This is a National duty.* It is one that the *National Government only* can adequately discharge, and its expense is, equitably, one which should be defrayed *from the National Treasury.*"

The report of Dr. Rauch's tour of inspection is already a classic. It goes without saying that, while he found much to commend in the devoted and painstaking attention of individual officers to quarantine duties, he discovered, with very few exceptions, an almost entire absence of all the essentials of a thoroughly equipped quarantine station. Commenting upon this he says:

"During all this time, from the earliest date to the present, the control of quarantine has remained entirely under the jurisdiction of State and local authorities, except during the brief period in which the National Board of Health exercised its limited quarantine powers under the act of 1878, and which expired in 1882. It is this absence of adequate National health authority and legislation, and the fact that, in such absence, the maritime quarantines are controlled and administered by State and local authorities—resulting in diverse, and frequently conflicting, regulations and requirements and, of necessity, in a tendency to limit precautions to their own individual interests, commercial as well as sanitary—which throw upon interior States the responsibility of fully informing themselves of the strength or weakness of these outposts, in order to know where to an-

ticipate danger and how to make their own preparations to meet it.

"At its last session, Congress appointed a Commission to examine and report upon the measures necessary for the defense of our seacoast against a foreign armed enemy, and a distinguished publicist and statesman, Mr. Tilden, has recently urged this as a paramount duty of the Government. Millions of dollars have already been expended for such defense, and millions more will probably be forthcoming to meet this possible contingency. But the assaults of foreign contagion are not a contingency. They are actual events, and during the past twenty years they have cost the country an aggregate loss of life only less than that of the great war immediately preceding. Every sanitarian and many of our leading statesmen know that this actual and ever-recurring loss is wholly and entirely preventable by the expenditure of a sum which sinks into utter insignificance before the millions which will be appropriated for the protection of our coasts against a possible future danger.

"But thus far neither sanitarian nor statesman has been able to overcome the petty jealousies of individuals, communities, and of States themselves, so as to secure the legislation necessary to remedy even the present confusion."

Early last autumn two or more cholera-infected ships lay in New York Harbor, while the disease was spreading with considerable rapidity among the passengers who had been disembarked upon Hoffman's Island for observation. Impressed with the gravity of the situation, the College of Physicians of Philadelphia, one of the most venerable and least aggressive of American medical societies, on the 5th of October, appointed a committee "to consider the present danger of the importation of cholera into this country, and to secure concerted action among the medical societies of the land in urging upon the State and National authorities the adoption of a uniform and efficient system of quarantine for all exposed ports." This committee, consisting of Drs. J. C. Wilson, Chairman; E. O. Shakespeare, late U. S. Cholera Commissioner to Europe; and Dr. R. A. Cleemann, late member of the Philadelphia Board of Health, did its work thoroughly and well, and reported its results fearlessly and impartially.

It took up two main questions:

1. What are the requirements of an efficient quarantine against cholera?
2. To what extent do the existing arrangements at the Ports of New York, Philadelphia and Baltimore fulfil these requirements?

Their reply to the first of these questions, taken from an editorial in the *Medical News* of October 15, sums up these requirements so completely and concisely that I make no apology for reproducing it in full:

"Measures of prevention, to give the greatest possible guarantee of success in extinguishing an incipient epidemic of cholera, should, in the first place, be based upon the most exact knowledge we possess of the cause, mode of attack, and manner of spread of the disease; and, in the second place, these measures should be intelligently, thoroughly and rigidly enforced.

"What are the considerations involved in the first category? Probably nine-tenths of intelligent and experienced physicians all over the world, even including those of India, have for years admitted that there is most convincing proof that the active cause of the disease is a specific, material, living entity, of extremely minute size, endowed with the power of self-propagation, and of exceedingly rapid multiplication in enormous numbers; that among animals it naturally attacks man alone, assailing him only by way of the intestinal canal; that the evacuations from the bowels contain the active cause of the disease, and that when this agent in any manner—as through drinking-water, milk, food, the handling or washing of contaminated personal effects, etc.—reaches the intestines of another susceptible person, the disease may be thereby transmitted from the sick to the healthy; that the active agent exists in the dejecta of the lightest and most imperceptible, no less than in the severest and most deadly forms of the disease, and is known to be transportable from place to place through the movements of man and his personal effects.

"Proceeding from this basis, logical deduction and common experience alike demonstrate the absolute necessity and efficiency of such measures of prevention as the following:

"a. Speedy recognition and isolation of the sick; their proper treatment; absolute and rapid destruction of the infectious agent of the disease, not only in the dejecta and vomit, but also in clothing, bedding, and in or upon whatever else it finds a resting-place.

"b. The convalescents should remain isolated from the healthy so long as their stools possibly contain any of the infecting agent; before mingling again with the well they should be immersed in a disinfecting bath, and afterward be clothed from the skin outward with perfectly clean vestments, which cannot possibly contain any of the infectious material.

"c. The dead should be well wrapped in cloth thoroughly saturated in a solution of corrosive sublimate, 1 to 500, and without delay, cortege, or lengthy ceremonial, buried near the place of death in a deep grave, remote as possible from water which may, under any circumstances, be used for drinking, washing, culinary, or other domestic purposes. (Cremation, of course, is by far the safest way of disposing of cholera cadavers.)

"d. Those handling the sick or the dead should be careful to disinfect their hands and

soiled clothing at once, and especially before touching articles of food, and drinking or culinary vessels.

"e. In the case of maritime quarantine, the well should be disembarked and placed under observation in quarters spacious enough to avoid crowding, and so well appointed and furnished that none will suffer real hardships.

"f. Once having reached the station, those under observation should be separated in groups of not more than twelve to twenty-four, and the various groups should under no pretext intermingle; the quarters for each group should afford stationary lavatories and water-closets in perfect working condition, adequate to the needs of the individuals constituting the group, and supplied with proper means of disinfection. There should be a bed raised above the floor, proper coverings and a chair for each member of the group, each person being required to use only his own bed. There should be a common table of sufficient size to seat around it all the members of the group, who should be served their meals from a central kitchen, and with table furniture belonging to the station and cleaned by the common kitchen scullions.

"g. Drinking-water, free from possible contamination and of the best quality, should be distributed in the quarters of each group, as it is needed, and in such a manner that it is received in drinking-cups only; there should be no water buckets or other large vessels in which handkerchiefs, small vestments, children's diapers, etc., can be washed by the members of any group.

"h. Immediately after being separated into groups in their respective quarters, every person under observation should be obliged to strip and get into a bath (a disinfecting one is preferable), and afterward be clothed with fresh, clean vestments from the skin outward. Every article of clothing previously worn should be taken away and properly disinfected.

isolate as soon as possible new cases which may develop; and, of course, the clothing and bedding of these new cases should be treated without delay in the manner already mentioned. In the meantime a watch should be set over the water-closets, for the purpose of discovering cases of diarrhoea, and when discovered such cases should be temporarily separated from the rest; they should receive judicial medical attention at once, and precautions should be taken as if they were undoubted, but mild, cases of cholera.

"m. The quarters should be kept thoroughly clean, and every surface upon which infectious material could possibly be deposited, including the floors, should be washed with a strong disinfectant twice daily, and oftener when necessary; evacuations from the bowels should be passed into a strong disinfectant, the hopper of the closet should be then flushed, and finally drenched with a quantity of the same disinfectant.

"n. For the proper attention to the sick, there should be two or more competent and experienced physicians, assisted by a sufficient corps of intelligent and efficient nurses, with hours of duty so arranged that a physician with a sufficient number of nurses be in constant attendance in the wards of the hospital.

"o. For the prompt recognition and separation of new cases, their temporary medical attention, the proper treatment of discovered cases of diarrhoea or cholera, and of other maladies, and the immediate correction of every insanitary practice or condition by constant, vigilant and intelligent supervision, there should be at least two or more competent and experienced physicians, with hours of service so arranged that a physician is on duty night and day among those under observation; and he should have subject to his orders, at any and every moment, a sufficient and efficient corps of nurses and laborers to carry out properly and promptly his directions.

"p. In order to prevent the intermingling of

to every one of the ship's inhabitants. The observation, isolation, and cleansing of the crew and their effects, could safely be performed aboard ship if necessary. The ship should be thoroughly cleansed and disinfected, particular attention being given to the quarters of the emigrants and crew."

In regard to the second inquiry, it must be observed that it refers to the three most important ports of entry of the Middle States, if not of the country, and to those which are in most immediate and constant communication with the whole grand interior chain of lines of travel and traffic. And while I cannot accept the conclusion that "there is no reason to believe that the conditions of other ports of entry upon our Atlantic and Gulf coasts are in any respect superior," yet it must be admitted that the possible exceptions to this sweeping condemnation are extremely few. Passing over the minutia of the report of these inspections, which should be carefully read by every practical sanitarian, I make a few extracts from the general conclusions arrived at:

"It is evident that the quarantine establishments at Philadelphia and at Baltimore fail in the most essential requisites of the necessary number of properly equipped buildings for the isolation and observation of a large number of immigrants."

This is all the Committee say with regard to these ports. Could condemnation be more utter and complete. Its very brevity is appalling. Its language is very nearly that of a letter addressed by the speaker to the Board of Health of Philadelphia a short time previously, which says, "Permit me, however, at the risk of seeming pertinacity, again to call your attention to the *entire inadequacy of the provisions made by the State authorities* for coping with a similar emergency in our own port." They "are those of nearly a century ago, when the present metropolis of Pennsylvania was but a country town. What might have been the consequences to her teeming population had the ship 'Alesia' ascended the Delaware river to Chester, instead of anchoring off Sandy Hook, it is not pleasant to contemplate." New York, however, had a plant of sufficient dimensions to make it and its administration worthy of notice in detail. But so insufficient were the precautions and so defective the provisions there found, that the Committee felt compelled to record their verdict that,

"It would seem that if the importation of immigrants directly from a European port notoriously infected, is not to be temporarily prohibited as a necessity of public safety, or if the treatment of these immigrants after their arrival at the New York quarantine station is not to be immediately

and radically improved, our protection against an epidemic at the present time must rest mainly upon the fortunate circumstance of the near approach of a season in which the disease does not usually spread. The continuance of cholera among the passengers of the 'Alesia' so long after their removal to the station of observation, in itself demonstrates the inefficiency of the measures which have been adopted and enforced for its extinguishment there. Although we have not yet heard of the development of the disease anywhere on the main land, nevertheless, in view of the almost uncontrollable tendency of cholera to spread at times, and of the original insufficiency and the present faulty constitution of the police force on Hoffman Island, we feel impelled to believe that the immunity up to the present time has been owing to singular good fortune, rather than good management."

The report concludes nearly as follows: "It is natural, after having made our comments on the defects of the quarantine stations we have described that we should endeavor to point out their causes and probable remedy. There is one cause so prominent that we may dwell on that alone. It is the great expense. Were it not for the question of money there would have been physicians constantly in attendance at the New York station, and, consequently, better management and discipline would have been maintained, while at Philadelphia and Baltimore there would have been adequate establishments provided for the isolation and observation of large bodies of immigrants.

Municipalities and States are wont to scrutinize every dollar of their money appropriations, bringing their expenses down to the closest living limit. Quarantine in this country being, as a rule, enforced mainly against yellow fever and smallpox, a mistaken economy has caused no provision to be made for the more perfect establishments absolutely required for protection against cholera.

Philadelphia, Baltimore, and other ports of a more limited commerce, are unable to spend as much on their stations as is New York, with its large revenues from that source, yet an inefficient quarantine at any station exposes the whole country to the dangers of the importation of disease. But it is manifestly unfair that a single municipality or State should defray the expense of protecting the whole public.

How, then, can we have equally complete stations all along the coast? We believe that this can be effected by putting quarantine into the hands of the National Government.

Continuing its valuable labors, the committee proceeded to draw up "An address to the Medical Societies of the United States concerning the dangers to which the country is exposed by the ineffectual methods of quarantine at its ports, and in regard to the necessity of National control of

Maritime Quarantine." This address is based upon the combined results of Dr. Rauch's investigations and its own, and it aptly calls attention to the fact that an "inspection made during seasons of comparative quarantine inactivity" must of necessity be inadequate and misleading, and calculated to foster a false sense of security. Under the pressure of the emergency of a present contagion and thousands of suspects, glaring deficiencies instantly manifest themselves which were before unthought of. The general propositions submitted in the address, as a result of the consideration of existing conditions, are as follows:

First. "It is impossible adequately to protect the public health of the country against the importation of epidemic diseases by independent local maritime quarantine establishments."

Second. "A National system of quarantine is necessary."

Third. "A National organization would secure advantages not attainable by independent local quarantine establishments, however complete."

Among the subsidiary statements with which they reinforce these theses, I note the following:

"There is always great difficulty in obtaining sufficient appropriations of public money to defray the expenses of the necessary quarantine establishments and their proper maintenance. It is only possible, during periods of threatened invasion, to procure the considerable sums of money necessary for these purposes, whilst in the interim the money expended is greatly inadequate, though large sums are constantly needed. When the invader is at our gates it is often impossible to plan, construct or repair, and properly equip and garrison an efficient line of defences.

"Rival political and commercial interests are inimical to the perfect protection of the general public by independent and local quarantine.

"It is but natural that municipal organizations should, in looking after their own interests, pay little regard to the welfare of distant communities.

"In this connection may be noted the indisposition and failure on the part of local quarantine officers to notify the authorities interested of the arrival of emigrants from infected localities. Notwithstanding the frequent paramount interest of inland communities in the efficiency of the establishment and administration of quarantine at the seaboard, the local authorities of the latter frequently evince an unreasonable jealousy of any sort of investigation or suggestion looking to the general welfare.

"The benefits of quarantine inure to the welfare of the whole country; therefore, it is just that money should be as freely expended when necessary at one port as at another, without respect to their relative commercial importance. It is manifestly unfair that the seaboard cities and States should, as at present, be obliged to bear the entire expense of quarantine establishments

designed to protect the inhabitants of every region of the vast territory of the United States.

"A National quarantine, properly administered and conducted by trained officials accustomed to deal with contagious and infectious diseases, would tend to prevent panic, to allay undue anxiety, and to favor a reasonable sense of security.

"Experience has shown that much needless alarm, as well as preventable danger, arises upon the appearance of an unfamiliar epidemic disease at quarantine stations; as when cholera has shown itself at New Orleans or New York, or yellow fever at Philadelphia or Boston. A National quarantine would go far to do away with the necessity for vexatious temporary interstate quarantines, which so seriously disturb inland trade.

"A National quarantine system, directed in such a manner as fully to meet the requirements of existing sanitary knowledge, would not adversely disturb any commercial interest. It would, on the contrary, do away with many of the embarrassments incident to maladministration of existing local regulations. For example, the healthy passengers of the Italian steamship *Alesia* were detained at quarantine in New York harbor for a period of fifty-eight days, while under an efficient system uninfluenced by needless fears, those of them who were free from disease could have been safely liberated in ten days at least."

The committee thus sums up its conclusions:

"*Summary.*—Under the present system of local and independent maritime quarantine, the necessary quarters for the detention of large numbers of immigrants arriving in a suspected vessel, are either entirely wanting, or, if at hand, are deficient in equipment or administration, or both. It is possible, however, that one port well governed and rich from prosperous commerce, may make up these deficiencies; yet what would this avail even to that community itself, if a neighboring port, only a few hours distant by rail, failed to exclude epidemic diseases? The front door might be doubly barred and bolted, but the enemy would find an easy passage through the defenceless rear. As recent examples thereof may be instanced the danger of an epidemic of yellow fever to which the little town of Biloxi, in Mississippi, exposed in 1886 not only the interior States, but even the city of New Orleans itself, now apparently so well protected by her own system of maritime quarantine; and that to which, in 1887, the defenceless condition of the small port of Tampa, in Florida, exposed not only that State, but others.

"This want of uniformity in the quarantine defences along our coast must necessarily exist when different authorities supply the money for maintaining the several stations, and the purse of one port is longer than that of its neighbor. Another money difficulty is found when the appropriation for the same station comes, as it may, from the coffers of both city and State; possible difference

of opinion in the municipal council and the State legislature is likely to endanger the sufficiency or change the direction of the funds to be expended. In any case, the danger to a single port of entry, or even to a single State, is by no means the same as that which threatens the country at large, and communities are not likely to make a larger expenditure than is needed for their own defence. As an illustration of the difference in the conditions of danger which may exist between the port of entry and the interior of the country, may be mentioned the passage of immigrants with infected baggage. The immigrants may come from a healthy port and in a healthy ship, and with the poison securely imprisoned in their baggage, will pass through the port of entry with perfect safety to its inhabitants; the danger will begin in that far interior where the baggage is opened. It is of no interest to that port to have the baggage disinfected, and it is carried on to some uncertain place unhindered to do its fatal work. And here may be pointed out the rather peculiar position in which America finds itself, in attracting to its shores hordes of immigrants from the older countries. There is in municipalities little disposition to spend more even than is called for to satisfy immediate wants; remote necessities are seldom provided for. A quarantine that is not always in use, is not always ready for use. It is only when danger is at its gates, and when, perhaps, it is too late for protection, that a city wakes up to its defenceless state. Municipalities are selfish, and knowing that with the trader quarantine is not a favorable institution, and that it is his tendency to sail into that port where the quarantine is most lax, they are assailed with a sore temptation to wink at the neglect of proper precautions if, by so doing, they may circumvent a possible commercial rival.

"In the opinion of the committee, the difficulties mentioned can only be overcome by the adoption of a maritime quarantine under the control of the National Government."

Commenting upon this report, in its issue of Nov. 5, 1887, the *Medical News*, of Philadelphia, pertinently says:

"As the testimony of thoroughly competent and independent observers, a committee of one of the most conservative and respected medical bodies in America, it carries with it the weight of conviction, and conclusively proves the urgent necessity of a radical reform in our method of guarding the country against devastating epidemics with which we are, through foreign communications, from time to time threatened.

"Should the germs of cholera finally escape or be permitted to pass beyond quarantine, they may not limit their onslaught to the nearest city, but may spread over the land and ultimately carry sorrow and loss to homes hundreds, and even thousands of miles distant from the port where they entered.

"The abuses and the faults of an exclusively local quarantine, such as at present exists, are so natural and intrinsic that we should, by this time, acknowledge the absolute need of a National protection of the general welfare by a National maintenance and administration of quarantine."

Meantime, the entire country appears to be waking up to a sense of the urgent need for immediate and definite action in the direction indicated. The Senate Committee "on Epidemic Diseases, in relation to Seaboard Quarantines" has had under consideration during the present session the following bills, resolutions and memorials:

Senate Bill 665, "To establish a quarantine station at the port of San Francisco;"

Senate Bill 1641, "To establish a permanent quarantine station at or near Cape Charles, Virginia;"

"Resolutions of the Legislature of the State of Virginia in the nature of a memorial, asking the establishment of a quarantine station at Cape Charles;

"Resolutions of the Board of Trade of Chester, Pa.;

"Petition of the Board of Health of Rockford, Ill.;

"Resolutions of the Board of Health of Charleston, S. C.;

"Petition of the Medical Society of San Diego, Cal.; and

"Resolutions of the American Public Health Association;

"All urging the establishment of national quarantine at the points of danger upon the Gulf and seacoast."

The Committee expresses its belief "that it is the duty of Congress to so regulate commerce as to prevent the introduction of contagion from foreign countries into the United States, and has therefore reported, with favorable recommendation, an original bill providing for the establishment of seven thoroughly equipped quarantine stations in addition to the one already provided for at the mouth of the Mississippi river, viz: at the Delaware Breakwater; Cape Charles, Va.; Sapelo Sound; Key West, Fla.; San Diego, Cal.; and Port Townsend, Oregon.

"The estimated aggregate cost of construction and equipment of these quarantine stations, including the one at the mouth of the Mississippi river, is \$489,500, and the estimated aggregate annual cost of maintaining them is \$93,000.

It is not conceivable that when once the National Government has committed itself so far both in policy and expenditure, it will long delay the extension of this system northward, and the making it uniform throughout the entire coast line. Of course there will be differences of opinion, as to whether the bureau into whose hands would fall the superintendences of these

stations under the existing law, is the appropriate one, and whether the preservation of the public health is not an interest of sufficient magnitude to entitle it to a department of its own. But when such substantial safeguards are offered us, it would not be the part of wisdom to reject them on merely theoretical or sentimental grounds. Consider for a moment the unprotected condition of the Delaware river as revealed in the reports referred to; ascending the bay and river a distance of nearly 80 miles before the Pennsylvania or Philadelphia quarantine station is reached, through a populous country, passing numerous villages, and two considerable cities, with no other restrictions than the local regulations of the coasting trade; the Philadelphia quarantine station situated close to a large and rapidly growing city, whose Board of Trade have already taken the alarm and protested in a memorial to Congress against the dangerous contiguity; and yet, both the State of Pennsylvania and the City of Philadelphia are utterly powerless to remove it to a better and more distant location, from the simple fact that the boundary of the State is only a few miles lower down the river, and the entire intervening distance along the river bank is one continuous settlement. The only proper site for a quarantine station is within the limits of the little State of Delaware, and the expenditure necessary to establish and maintain a properly equipped station for the protection of Pennsylvania, New Jersey and the "parts beyond" would drive her into immediate and hopeless insolvency. There are but two solutions of this pressing problem: Either the National Government must promptly establish a well-appointed quarantine down the bay, or the three States of Pennsylvania, New Jersey and Delaware must form a tripartite alliance, and unite in defraying the expense of protecting themselves and the nation against their common foe. It is a question, however, whether this would not be establishing an *imperium in imperio* which would be more defiant of constitutional restriction than the federal interference for which it would be a substitute.

In conclusion, I beg leave to offer the following resolution:

Resolved, That the Section on State Medicine respectfully suggests to the American Medical Association, the importance of formally urging upon the National Congress the duty of at once assuming entire control of maritime quarantine, and of taking immediate measures to make such quarantine effective before the advent of hot weather.

DR. J. B. HAMILTON, Surgeon-General U. S. Marine Hospital Service: Let us consider for a moment the actual state of affairs; the condition of the countries quarantined against. The purification of Calcutta would only purify the local

region; Bombay and the entire Presidency was as much infected with cholera as Calcutta. The time will come when the International action consequent upon International sanitary conferences will alleviate this condition, as the quarantine which had been established at the Red Sea entrance of the Suez Canal, and which was continued by recommendation of the last International Sanitary Conference. Public sentiment would prevent the existence of a cholera breeding spot at Calcutta, and one of yellow fever in Cuba. In the meantime, shall the National or local Government do the work in this country?

Where the commerce was large enough for the revenue from the quarantine inspection service to support it, the State would wish no change made. But when, as at Philadelphia, Pennsylvania would have to enter into a treaty with New Jersey and Delaware, in order to enforce quarantine, it seems to me the intervention of the National Government would be preferred. Vessels coming to Delaware Breakwater with small-pox cases on board left them at Lewes, Delaware, where they took the train and proceeded to the heart of the city of Philadelphia. To-day no perfected quarantine existed on the Pacific coast. Petition after petition has come to the Treasury Department, requesting interference in behalf of passengers detained on infected vessels. A year or two ago yellow fever patients were found walking in the streets of San Francisco. Even now cholera is in Chili. It was introduced into South America in a criminal manner; a high official wishing to land from an infected vessel, and cholera patients went ashore with him.

Regarding the constitutionality of Congress to enact epidemic laws, this question has arisen under the very bills referred to. The Senator best informed on quarantine matters said that Congress had no right under the public welfare clause of the Constitution to enact such laws. But under that section authorizing Congress to enact laws regulating commerce, the Senate now passed these bills. The law of 1878 allows the making of quarantine regulations, which, when approved by the President, and not in conflict with existing laws for the preservation of the public health, are executive orders and have the force of law.

The old law provided no penalty for vessels bringing contagion, or for violating its provisions. The proposed law provides a fine of \$300 on a master of a vessel or other person who brings in infectious disease, or who violates the regulations framed in accordance with the act. It also provided a penalty for trespass on quarantine grounds. The proposed quarantine stations are to be located at Delaware Breakwater, Norfolk, Sapelo Sound, Key West, San Diego, San Francisco and Port Townsend. To provide for these quarantines boats, disinfecting machinery, hospital buildings, etc., an appropriation of \$480,000 had been asked. It was

estimated that the expenses of administering these stations would be \$90,000 per annum. In order to have no delay the estimate for the existing fiscal year had been included in the appropriation asked for. Heretofore the quarantine appropriation has been contingent.

With cholera in Europe, yellow fever in the West Indies, and small-pox threatening from various points, it could be assumed that the danger always existed.

At the request of the Louisiana State Board of Health I have directed one of my officers to go to New Orleans to make a thorough inspection of the quarantine at that port. In case the test should prove to be satisfactory, the machinery will be duplicated at each of the proposed quarantine stations. Of course this is dependent upon the House of Representatives passing the bill which has been enacted by the Senate.

DR. HIBBARD, of Indiana: Is the House of Representatives in favor of making the appropriation?

DR. HAMILTON: I know of no opposition, but in order to secure speedy action on the bill support is needed. In accordance with a law passed last March a Board composed of Dr. Wilkinson, the President of the Louisiana State Board of Health, two officers of the Marine Hospital Service, and an officer of the Revenue Marine Service, have selected Chandeleur Island as the most advantageous site for the Gulf quarantine.

One thing I should have mentioned as needed at the proposed quarantine stations is well equipped bacteriological laboratories. The cordial co-operation of the medical profession is earnestly desired. There is no desire to interfere with local quarantines; the latter will have to equal those of the United States, or in the event of the demonstrated efficiency of these, public sentiment will demand their substitution for local quarantines.

DR. ORME, of California: I am pleased to hear so fully from Dr. Hamilton. We all know the importance of this subject, and I would like to know what pressure is necessary to secure the desired end.

DR. LINDSLEY, of Tennessee: I move that a committee be appointed, of which Dr. Lee be the chairman, to draft a resolution for presentation to the Association, petitioning Congress to take immediate action on the law.

VACCINATION AND REVACCINATION. — M. PROUST, in a report to the Académie de Médecine, shows that the question as to the utility of vaccination and revaccination is about solved. In Germany, where vaccination is compulsory, small-pox no longer occupies a place in the statistics of the causes of death. The death-rate from small-pox in Berlin is 1.5 out of 100,000 inhabitants. In Paris the rate is 136, or 4000 a year.

THE ANTIPYRETIC, AND THE ABORTIVE TREATMENT OF TYPHOID AND REMITTENT FEVERS.

Read before the Wisconsin Medical Society, June, 1883.

BY J. R. BARNETT, M.D.,

OF NEENAH, WIS.

CHAIRMAN COMMITTEE ON PRACTICE OF MEDICINE.

(Concluded from page 447.)

Out of a total of about 100 of these cases, including more than seventy of typhoid, only two died. One of these, already reported, suffered an enormous epistaxis on the seventh day, following repeated bleedings before, and died on the ninth. The treatment of this case was mostly by quinine, on account of the hæmorrhage; which, it may be remarked, was the only alarming symptom which presented.

The other fatal one had an intestinal hæmorrhage on the third day of sickness in bed, with a coincident fall of temperature to 99°. The patient died suddenly early next morning, before I saw him. An autopsy was not permitted, and the cause of death is therefore conjectural. I was told by the family that his physician had some years before diagnosed fatty and enlarged heart. He had been a hard drinker for many years, and for this reason I had allowed stimulants throughout his short sickness.

The early occurrence of hæmorrhage is interesting, unless it be assumed that the patient was somewhat advanced in fever before he took to his bed. It is not improbable that a large concealed hæmorrhage contributed more to the sudden death than did the fatty heart.

Having now presented all the striking cases, and the worst ones, occurring in the last series of two years, without, however, going into daily clinical details which might unnecessarily prolong this paper, I shall draw upon the current literature of the subject for facts reported by other, and perhaps less partial, observers. These have accumulated during the past year to an amount that gives them decided value, even from the statistical standpoint, but more still for the broader therapeutic basis they have given the ammonium salicylate, and for the elimination of an important error of opinion to which its earliest use led.

This error, first pointed out by Dr. J. D. Sullivan, of Brooklyn, N. Y., consisted in ascribing stimulating properties to the salt, whereas its effects are undoubtedly sedative and depressing. It ought to be explained, however, that the mistake arose naturally from the manner in which the remedy was extemporaneously prepared. At that time there was no ammonium salicylate, so far as I knew. It had to be extemporized by the druggist, and sometimes the mixture would contain the salicylic acid and ammonium carbonate in the proportion of three to two, varying all the way to equal parts, according to indications for stimula-

tion presented by the case in hand. But both of these proportions represent the carbonate of ammonia in excess, and the last and commonest proportion represents an excess great enough to constitute the mixture a stimulant under most circumstances.

Besides, the use of such a mixture enabled one to dispense with alcoholic stimulants, which had hitherto been a necessity, and so the error, such as it was, was confirmed.

I was interested to observe that Dr. Sullivan, who first announced the depressing effect of the neutral ammonium salicylate, corrected this effect by adding the aromatic spirits of ammonia.

His interesting paper on the therapeutic effects of this salt, read at the annual meeting of the Fifth District Branch of the New York State Medical Association, and published in *Gaillard's Medical Journal* for July, 1887, related mainly to cases of erysipelas, septic cellulitis, puerperal septicæmia and the septic fever of tuberculosis; in which he affirmed the antiseptic and antipyretic effects of the remedy were strikingly shown; but he had had the opportunity to employ it in only one case of typhoid. This displayed all the general characteristics of the disease, with a temperature of 102° . Prescribing 8 grs. of the salicylate every four hours, after a small dose of calomel, he found "on the next day his (the patient's) temperature was reduced to 100° , his skin was moist, and he expressed himself as feeling somewhat better, and the following day his improvement was quite evident, and the ammonium salicylate was reduced to 8 grs. four times a day. He continued to improve daily, and to my surprise," the reporter adds, "I found him dressed and sitting up. His temperature was normal and he complained of nothing but weakness; he continued to improve, and within two weeks from the time of my first visit he was able to return to his business."

It is, however, mainly from his experience with this agent in septic fevers of inflammatory origin that Dr. Sullivan draws, among others, these conclusions:

"It is certainly a very effective antipyretic. In certain diseases of septic origin it exerts a curative action by tending to retard, and possibly inhibit, the development of septic elements in the system.

"It will not reduce the temperature as rapidly as antipyrin or antifebrin, but the antipyretic effect is more lasting than that produced by either of these agents."

Dr. Oscar A. Fliesburg, of Hudson, in a paper read before the Inter-state Medical Association during the meeting of last July, and published in the *Therapeutic Gazette* of the following October, records the results of his own experience with this remedy in typhoid fever and the fevers of the puerperium, as well as in most inflammations of the respiratory tract, with a positiveness of conclusion

not to be mistaken. Extemporizing the salt with a large excess of ammonium carbonate—two of the latter to one of the acid—he gave it in doses reaching 15 grs. or more, to be repeated as needed every hour or two. He says: "I have with these doses been able to reduce temperature in a short time from 105° or 106° to 99° or 100° , and by repeated doses at longer intervals been able to keep the temperature down at that point. At the same time my cases have progressed without much other medication to a favorable end in a shorter time, and with less distress to the patient, than by the older methods." In general terms he says: "The fact stands undisputed and proven that we, in salicylate of ammonium, possess a sure remedy to reduce temperature, and by its germicidal and antiseptic properties able to abort and shorten the zymotic diseases."

In a paper entitled "Salicylate of Ammonium for Fevers," which appeared in *THE JOURNAL* of February 11, 1888, Dr. D. M. Wick, of New Hartford, Iowa, gives the clinical histories of several cases of remittent fever, from which I will make brief extracts.

A boy of 6, with a temperature of 102° to 103° , was put upon calomel, to arouse the secretions, quinine, as an antiperiodic, and sweet spirits of nitre as a febrifuge, with the effect that a bright scarlatinal rash, with œdema of hands and feet, and intense itching, were produced, without any favorable effect upon the fever, which increased to 103° and 104° on the fourth day of treatment. This was now changed to ammonium salicylate, 2 grains every two hours, unaided by any other remedy. Dr. Wick adds: "I saw the patient again in eight hours, and found him with temperature reduced to 99.5° , resting quietly and sweating profusely. Next day the temperature was normal, the boy feeling so well that he wanted to be up and dressed. He made a rapid recovery."

Another boy, æt. 5 years, had been sick with remittent fever nearly a week when first seen. He was given the orthodox treatment for a week more, the temperature never falling below 102° , skin hot and dry all the time. Dr. Wick continues: "I again dropped all other drugs and gave salicylate of ammonium, gr. ij every two hours. In about eight hours his temperature fell to 99° , and he was bathed in perspiration. Continued the dose once in four hours. Saw the case next day and found no fever; tongue clean, skin moist, and the boy in every respect improved. He had no relapse, and was soon able to be around."

A girl 11 years old had had a run of measles, but fever continued high (102° to 104°), diarrhœa supervened, sordes appeared, and semi-delirium, with a temperature of 105° . When these had continued five days, the case assuming a very serious aspect, the salicylate was substituted for all other remedies, in the dose of 2 grs. every hour.

Says Dr. Wick: "The nurse told me the next morning that after giving the fourth dose the patient began to sweat, and by the time the fifth was to be given her clothing was so thoroughly saturated that the time was lengthened to four hours. Her temperature was normal. From this time she gained rapidly without one unfavorable symptom, and in one week was up." Concluding his report the doctor says:

"What is there in salicylate of ammonium that arrests high fevers so abruptly? Had the quinine, in the two remittent fever cases, neutralized all malarial poison, and, when the salicylate was given, ushered in the sweating stage? Or was it the germicidal, antiseptic and antipyretic powers of the salicylate that acted so happily? There is a *something* in its make-up that subdues arterial tension and chemically destroys the microorganisms in the blood."

In THE JOURNAL of March 3, 1888, appears a communication from Dr. D. L. Sauerhering, of Wausau, describing an endemic of typhoid, somewhat atypical in clinical history, which occurred in that city last season, and adding some comparative notes of treatment. In these he says: "Quinine, natr. salicyl. and antipyrin did not act satisfactorily in my hands, for, if given in doses large enough to depress the temperature, it would remain so only for a short time, returning to its original height in the course of ten or twelve hours, notwithstanding the constant administration of the antipyretic.

"The remedy *par excellence* proved to be the ammonium salicylate. It invariably reduced the temperature to 99°-100°, keeping it there during the entire course of the disease, diminishing the rate and force of the pulse and causing, in the majority of cases, profuse diaphoresis. When given early, within the first few days of manifestation of disease, it would generally break up an attack, the patient being able to be up and about the house in two or three days." In cases not seen until the beginning of the second week such drugs as were indicated were added to the treatment, *e. g.*, digitalis, potassium bromide, turpentine and opium.

He relates a case to illustrate the prompt action of the drug:

German, 21, laborer, seen on the ninth day of fever, at 7 P.M. Face flushed, skin hot and dry, pulse hard and full, 120; temperature 105.2°. There was considerable tenderness along the course of the colon. He was placed upon a mixture containing ammon. salicyl., gr. viij; tr. aconiti, gtt. j; potass. brom., gr. vj; ext. ergot, fl. gtt. iij, to be given every two hours. Next day at 10 A.M. his temperature was 97.8°, pulse soft and full, 96, he was perspiring freely and was free from headache. His medicine was reduced one-half and, as there was constipation and dryness of the tongue, castor-oil and turpentine were

prescribed. Two days after this Dr. Sauerhering found his patient out of bed, and one week afterward able to do the chores about the barn. "His temperature never rose to above normal after the first decline."

Continuing, the doctor says: "I am unable to give an explanation of the action of this drug, but can say from experience gathered at the bedside that it has proved itself to be a very efficient remedy in the treatment of this disease—shall we call it typhoid? Some undoubted cases of typhoid occurred during the time."

Some general remarks as to the manner of administering the ammonium salicylate, and as to immediate effects, should be offered in conclusion.

In general terms, the dose of the salt is very near in size to the antipyretic dose of the acid, although not so large, for while the former is by far the more active germicide, it is also the better antithermic. The extemporaneous preparation of the salt from the acid and ammonium carbonate shows, after perfect evaporation, that it weighs but a trifle more than the acid employed; that is to say, enough water and carbonic acid disappear in the reaction to nearly equal in weight the ammonium carbonate. The preparation of it is one of the simplest tasks of pharmacy, for it is not necessary that exact equivalents should be prescribed, as a slight excess of the carbonate is almost always an advantage. Two parts of the latter to three of the acid represent such a slight excess, and the following formula is a convenient routine prescription:

Acid salicyl.	ʒiij.
Ammon. carb.	ʒij.
Aq. menth. pip.	ʒiv.

A teaspoonful of this given every two hours until its effects upon temperature are secured will usually be enough, although this quantity may, in many cases, be doubled. Symptoms of marked asthenia occurring early or late would make an increase in the ammonium carbonate necessary, but it is very seldom that it should exceed the acid in weight. On the other hand, in certain irritable states of the stomach any alkaline excess is objectionable, and a solution virtually neutral would be preferable. Such a solution would be obtained by taking out of the above formula 20 grains of the carbonate.

But it is to be said in favor of this salicylate that it is better borne by the stomach than any other with which I am familiar, and for this reason is often substituted to advantage for the sodium salt in the treatment of rheumatism, and the few inflammations in which the latter is commonly preferred.

Now and then, where constipation is present, it seems to act as a laxative, although it seldom or never increases the symptomatic diarrhoea of the fever. On the contrary, it has often seemed to lessen the frequency of the intestinal discharges,

while unmistakably modifying their character for the better. Indeed, this effect would alone justify the use of the remedy in the majority of cases of typhoid, were there no more cogent indications for it to fulfil. Dr. Sullivan has well pointed out the analogy of such treatment to the antiseptic treatment of infantile diarrhoeas by sodium salicylate, naphthalin, etc., as recommended by Hutchins, and others. It is not pertinent to the question, but I may add that Dr. Sullivan has substituted the ammonium for the sodium salt in these infantile cases, for the reason that "it is much less irritating and depressing."

The supposed laxative effect in fever cases characterized by constipation, is susceptible of another explanation—the natural evolution of the disease. But this symptom, whether artificial or natural, is always short-lived if it occur after the patient has been under care three or four days, that is to say, when there has been the opportunity to avert the severer abdominal lesions. When these have occurred,—when there has been considerable infiltration of the intestinal glands, or any degree of softening or ulceration, the time has gone for anything more than the palliation of this symptom in common with the associated symptoms of the fever. Stated in words this appears a trifle. At the bedside it is by no means a trifle. Let it be remembered that it is one of the maxims of the expectant treatment of typhoid that the diarrhoea is an eliminative process not to be interfered with. But intestinal disinfection and antiseptics, to the degree secured by the salicylate, not to mention its anterior effect upon the system at large, change the conditions of the case, and render what were otherwise a conservative evil, a needless evil. Now, with the help of a minute dose of opium given regularly, or a larger one given occasionally, the diarrhoea can be partially checked, and the business of elimination left to the renal and cutaneous emunctories.

Excretion by both of these channels is undoubtedly greatly stimulated by the salicylate. One of its earliest and most persisting effects, noted by all observers, is the free and often annoying diaphoresis, which accompanies, or even precedes the decline in temperature, and continues when the salt is given to maintain a normal temperature once reached.

The effect upon the kidneys is not so striking but is just as unmistakable. The quantity of urine is augmented, and it soon grows lighter in color and less offensive in smell. That this does not indicate a lessened excretion of solids has not been determined chemically, but it can be easily and surely inferred from the mental state of the patient. Delirium and coma-vigil are lessened to a marked degree, and in many cases averted altogether. Subsultus and carphologia, which often used to occur too early to be mere symptoms of adynamia, are now seldom observed, or only for a

few days. All this goes to show that an avowedly germicide and antiseptic treatment may do more to promote excretion, even while lessening the need for it, than the professed eliminants.

Headache is often relieved to a degree out of proportion to the temperature ebb. That this comes in part from an analgesic property of the salt has been proven in the different headaches of pyrexia.

Sleep is promoted; less, probably, from any hypnotic effect than from its modifying effect upon the general conditions pertaining to the fever. But in a word it may be said that the comfort of the patient is in every way promoted; every way save one. The one discomfort of its own that the salicylate brings is the ringing in the ears, which is so unpleasant to many that it is to be hoped that some remedy for it will be speedily found.

The cases observed during these four years have been singularly exempt from complications. The only case of intestinal hæmorrhage was the one reported. I do not recall a case complicated by pneumonitis or femoral phlebitis and thrombosis, nor, it is hardly necessary to add, of peritonitis from intestinal perforation. I do not speak of the absence of any one of these complications as singular; it is the exemption from all. Regarding the commonest one, pneumonia, we may say this, that whether we adopt the view of Klebs, that it is caused by the direct access of the bacillus typhus through the respiratory tract, or the more probable one that it is a septic inflammation from the hæmic contamination incident to the fever, that any germicide and antiseptic inhibitory of these agencies will as easily arrest the pneumonia as it will abate the fever. So if glandular infiltration is interrupted, and ulceration is prevented, there will be no intestinal hæmorrhage, no perforation, no peritonitis.

What of auxiliary treatment? Such treatment is very rarely required. In not more than one case in twenty has the question whether it were not well to give stimulants ever occurred to me. There is a general appearance of well-being and well-doing to the patient that is sufficiently reassuring to the physician without the need of extra precautions. Almost equally seldom will the question of giving quinine arise. A tonic seems as unnecessary as an alcoholic stimulant, while as an antipyretic quinine might certainly be left out of the question.

It would seem that laxatives, and especially cathartics, might be almost wholly dispensed with, unless it should appear that prolonged constipation had preceded the onset of the fever. Even then the laxative could be selected without any reference to antiseptic effects, so that the choice need not of necessity fall upon calomel. Its antiseptic effect would not add appreciably to that already attained by the salicylate.

Opium will find a useful place oftener than any other adjuvant; but as already intimated, it will be needed less than under former modes of treatment, while on the other hand, a safeguard is guaranteed for a much freer use, since the constant maintenance of free elimination is not now of such vital consequence.

To raise the question of the mode by which ammonium salicylate interrupts the course of typhoid and remittent fevers would, at the present time, be but to open up a field of boundless conjecture. This will have to be determined by future investigations, and by those qualified by experience in such researches. Still, I cannot forego expressing the belief that when this and similar questions are cleared up the conclusion will be in harmony with the views advanced by Professor Semmola before the Ninth International Medical Congress. "The true part played by bacteria in pathology," he says, "is the production by them of certain noxious and decomposed elements of the blood, which substances, and not the bacteria, are the potent factors in the causation of disease."

Not forgetting the cause of this cause, it is still probable that all the striking phenomena of these fevers proceed directly from this condition of the blood, this *ptomainæmia*, if we may use such a word, and it is at least presumable that the phenomena may be interrupted or averted by chemically changing those ptomaines, or undetermined noxious substances, so as to render them innocuous, and that without necessarily destroying the vitality of the bacteria causing them. The very unstable nature of these substances already known would invite such a mode of attack, and would justify the use of the feebler germicides, capable, nevertheless, of decomposing these substances.

While believing that the ammonium salicylate reaches the first cause of these fevers by a destructive or inhibitory action upon their specific germs. I believe also that this is likely to prove the lesser of its two leading effects, being led to this view by the clinical fact, reported two years ago, of the recrudescence of the fever when the salicylate is prematurely dropped out of the treatment, as at any time before the end of the first week. This, occurring after a day or more of normal temperature, would argue a re-intoxication by the products of the vital activity of bacteria still living; which is equivalent to saying that the bacilli may be present without fever so long as their immediate effects are neutralized, just as they may be present without fever when their vitality is seriously compromised.

Do the foregoing facts justify the conclusion that ammonium salicylate is a specific remedy for typhoid and remittent fevers? I think they do. The advocates of the iodine treatment of typhoid advance the unchallenged claim that it is a specific, while Liebermeister has shown that it is attended by a mortality of more than 14 per cent.

Ziemssen admits the same claim for calomel, while denying that it is able to shorten the disease; but the mortality following this treatment is nearly 12 per cent. The mortality for the cold-water treatment, as reported by Brand, of Stettin, out of a total of more than 8,000 collected cases is 7.4 per cent. Under all modes of treatment, as determined by Jaccoud from more than 80,000 cases, the fatality is, 19.25 per cent. Up to the present the mortality percentage for the ammonium salicylate treatment is somewhat less than 3.

It will undoubtedly be objected that cases ending in resolution during the first week, or before pathognomonic symptoms of the fever have time to develop, cannot be fairly classified as typhoid. This is a rational objection, but it holds equally against all statistics of specific treatment; for no medication with a view to aborting the disease many days later than this period will be availing. If then we are to await the occurrence of the distinctive anatomical lesions before being permitted to announce a diagnosis, it is clear that no remedy, now or hereafter, can successfully claim to be abortive or specific. It ought to be a basis for a diagnosis having all the elements of probable correctness, that a given case has occurred during the prevalence of typhoid, especially in the same family; that the usual prodromata have been present, and that high fever, characterized by the usual thermometric curve has existed for two or three days.

While it is possible that my diagnosis has not always been subject to these limitations, it is certain that the exceptions have been very few.

It must be admitted that the number of cases has been too small to have great statistical value, but they cover a period of four years, and so represent the average severity of the disease, whereas the same number occurring in the course of an epidemic might represent only a benign form of the malady, where the fatality would be light under any treatment, or without any.

If the consideration of the treatment of these two fevers in a single paper needs an explanation or apology it is this:

Save in unimportant particulars the treatment is identical. Both are arrested by the ammonium salicylate; such arrest being limited to the pre-inflammatory stage of typhoid, while it is doubtless practicable in any stage of remittent fever. This is so probable that it may serve in the differential diagnosis of cases hard to make out—cases which occur with sufficient frequency to the most careful and observing clinician. It may be fairly assumed that in a case of supposed typhoid, seen first after the occurrence of striking abdominal symptoms, and shortly aborted, a revision of diagnosis is warranted if not demanded. At the same time it is *practically* unimportant to make the distinction, since the revision, when made, involves no corresponding change of treatment.

RENAL TENESMUS:

A RESULT OF CHRONIC CYSTITIS AND URETERITIS; SUCCESSFUL TREATMENT BY KOLPO-URETERO-CYSTOTOMY AND INTRAVAGINAL DRAINAGE COMBINED WITH ELEVATION AND SUPPORT OF THE UTERUS AND OVARIES.

Read in the Section on Gynecology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

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(Concluded from p. 443.)

Ureteritis and Pyelitis.—I have referred particularly in the preceding remarks to the teachings of my first operation of kolpo-cystotomy, in 1861, and to those of the recent case cited, because they have a direct bearing upon ureteritis and pyelitis, belonging to the third and fourth classes of our division. They show the tenor of the line of work that I have pursued during all the succeeding years of my experience, which has finally led me to diagnosticate, differentiate, and treat successfully the two last named diseases. This has been done by a careful study of certain groups of symptoms and physical signs characterizing these and other lesions sketched in the first part of this paper. I will again briefly point out the more important differences between ureteritis and pyelitis. Ureteritis indicates its presence by congestion and thickening of the mucous lining of the vesical portion of the ureter, and by diminution of its lumen, coupled at times with intense morbid sensibility. Pyelitis evinces a thickening or hypertrophy of the walls of the ureter in some part or the whole of its extent, with partial or complete dilatation, coupled with no greater sensibility usually than accompanies the lodgement of a similar sized instrument in the male urethra for the relief of a stricture.

I am sorry that time does not permit me to report all of my cases of these two classes, in order to illustrate and substantiate more fully what I have said. Each presents certain points of interest, but at the same time there is a uniformity in the principal features of all. The case of Mrs. B., already related in the journal cited, I regard as typical of my fourth class, where dilatation of the ureter had occurred and the inflammation had extended to the pelvis of the kidney.

Kolpo-Uretero-Cystotomy.—By kolpo-uretero-cystotomy, described in my paper on the treatment of chronic pyelitis, and now advocated and recommended for the successful treatment of renal tenesmus, I mean the making of an opening through the vesico-vaginal septum not smaller than a silver half-dollar, and having specific and close relation to the outlet of the affected ureter and kidney. When of this size and in this situation, it insures a free and direct escape of the secretions from both organs into my intra-vaginal drain, from which a state of the most complete physiological rest is obtained, with the best pos-

sible aseptic surroundings of the newly-made wound. In this way the greatest comfort is conferred upon the patient in any position she may choose to take for sleeping, sitting or walking.

While it may seem to some, with no experience in such matters, that my recommendations for the establishment of the large openings in the two procedures outlined shows a needless sacrifice of tissue, with which I have, indeed, been charged by writers with regard to the first, yet, nevertheless, I am prepared to maintain the correctness of the practice on the basis of the good results I have obtained by them, and from having seen very defective vesical drainage and the evil consequences therefrom, when even larger fistulous openings existed than I have advocated, resulting from parturition. It is well to bear in mind that I operate either in the supported knee-elbow or left lateral position, using my bilateral dilating speculum, which spreads out the septum, very elastic in character, and the opening when made in it in this state of tension naturally seems large. From these circumstances it may be readily inferred that the loss of tissue is always more apparent than real.

Renal Tenesmus.—This brings us now to the study of renal tenesmus as a result of chronic inflammation of the mucous membrane of the vesical portion of the ureters, the main object of this paper. By renal tenesmus I mean violent and painful contractions of one or the other ureter and corresponding pelvis of the kidney, with marked tenderness or soreness under pressure of the latter organ, proceeding from morbid irritability of both structures. The pains occur in paroxysms, which vary in frequency, duration, and severity in different cases according to the stage of the preceding ureteritis and the extension of the lesion to one or both sides. As a rule, it is confined at first to the groin on one side of the body, and afterward to the corresponding lumbar region. In the more severe attacks the pain, besides being violent in these situations, radiates to the hip, the outer and inner sides of the thigh, the knee, leg, and even to the toes. Cramps of the muscles of the lower extremity on the affected side also occur in these severe paroxysms. In the well-marked cases, attacks of this sort come on daily, or even several times a day. They are most frequent and severe during the menstrual periods. The patients describe them as occurring most often during the night. They awake with a pressing desire to urinate; the emptying of the bladder is accompanied by more or less pain and spasm, and its evacuation is followed by a cramp-like pain ascending along the course of the ureter to the kidney, and radiating to the lower extremity. The patients sleep, as a rule, on the affected side, with the face turned toward the pillow, and it is the habit of many to draw the opposite thigh up over its fellow against the abdomen. The

pain is excited in the early stages by the marital relation, which in nearly all cases becomes intolerable in the advanced stages of the disease.

Other symptoms are associated with the renal pain and the disturbance of the functions of the bladder. Anorexia, nausea, and vomiting are almost always present, especially during the menstrual periods, and as the attacks of vomiting are generally long continued, the vomited matters become stained with bile. Jaundice is not even an uncommon result. Hysterical symptoms form a marked feature of most of the cases. The patients start at the slightest noise, become despondent, cry, and laugh without sufficient cause, and sometimes have well-marked hysterical convulsions followed by a period of unconsciousness. Finally, in the advanced stages of the disease, after years of almost ceaseless pain, when dyspepsia, loss of appetite, nausea and vomiting, torpidity of the liver, constipation of the bowels, and yellowish tinge of the complexion shall have supervened, the general aspect of the subject is that of inanition or starvation, from which, with continually increasing physical and mental sufferings, death puts an end to the roll.

That the pains which I have described as constituting renal tenesmus are referable to ureteritis, beginning in the lower part of the ureter as an extension of cystitis, and are due to spasm of the affected ureter and pelvis of the kidney, appears not only from their situation and character, but also from the following physiological signs and observations.

Tenderness over the kidney on the affected side is usually present. Frequently I find a small area of great sensibility midway between the crest of the ilium and the last rib. There may also be tenderness on pressure in the groin. More important and characteristic than either of these signs is great tenderness at the ureteral orifice, and along that portion of the ureter which lies in the vesico vaginal septum. The slightest pressure upon this part of the anterior vaginal wall on the affected side causes pain, which frequently ascends along the ureter to the groin and kidney. This, together with the sensitiveness of the urethra and the bladder, furnishes an explanation of the dyspareunia which is so commonly present in these cases. Pressure with even a few pledgets of dry cotton also gives rise to pain in the ureter. Looking back over my experience, I recognize these patients as those who were unable to tolerate columning the vagina with dry cotton for displacements of the uterus and ovaries—a practice, which I have pursued nearly twenty years.

Paroxysms of renal tenesmus may also be excited in a most striking manner by moderately distending the bladder with warm water. The pressure of the water, when sometimes only a few ounces are used, causes an irresistible desire to urinate, which, if not promptly relieved, is

followed by the pain along the ureter and in the kidney, even in the corresponding hip and lower extremity down to the end of the toes. The patients recognize the pain produced in this way as the symptoms which have been their chief source of suffering. The attacks of renal tenesmus brought on by either of these procedures may last for several hours or days, and are frequently accompanied by great mental excitement and hysterical manifestations. Hence the necessity of caution in adapting these means to the peculiarities of the case.

Corresponding to these clinical facts after a kolpo-uretero-cystotomy is done, we find great sensitiveness and irritability of the bladder and ureter. In the report of my first two cases of pyelitis, I stated that catheterization of the ureter caused but little pain. This is true in a normal ureter, and in some cases of pyelitis with considerable dilatation of the duct; but when pronounced ureteritis exists at or near the vesical orifice of the tube and renal tenesmus is present, the passage of the smallest instrument gives rise to violent paroxysms of pain. In the normal pelvis distention with fluid occasions moderate pain, identical in character with that we are considering, and the quantity of fluid thus injected becomes a measure of its capacity. When renal tenesmus is present, however, the pelvis of the kidney is intolerant of fluid, and the pain beginning before distention is reached may continue for hours. In these cases, therefore, the quantity of water that can be injected is rather a measure of the irritability of the pelvis than of its capacity.

This view of the causation and pathology of renal tenesmus is further strengthened by the results of treatment. As soon as the proper opening is made at the affected orifice of the tube, and the bladder and upper urinary passages are put at rest, coupled with suitable drainage and support of the uterus, the paroxysms become less frequent and soon disappear altogether.

Differentiation from Renal Colic.—The pain of renal colic also depends upon violent contractions of the muscular fibres of the ureter and pelvis of the kidney, and when renal tenesmus is severe there is a close similarity between its paroxysms and those of renal colic. The situation and character of the pains are identical in both, and associated with either there may be a frequent desire to urinate, cramps in the lower extremities, and nausea and vomiting. Both are due to spasm of the muscular fibres of the ureter and pelvis of the kidney; the distinction between them lies in the cause of the contractions. The contractions in renal colic arise from the impaction of a foreign body, usually a calculus in the ureter, causing the urine to collect in and distend the pelvis of the kidney above the seat of obstruction; the contractions which follow are a response to this powerful source of irritation, and the con-

dition of the mucous membrane, whether healthy or diseased, has little to do with their occurrence. In renal tenesmus, however, the irritable condition of the lining membrane, the result of ureteritis, leads to violent contractions of the muscular fibres of the ureter and pelvis from much slighter causes, as, for example, increased tension of the urine during forcible expulsive efforts of the bladder, or, as happens in the bladder, the presence of the urine itself, especially if abnormal, may excite spasmodic contractions. Dependent upon the difference in causation of renal tenesmus and renal colic, each possesses certain distinctive features. An attack of renal colic continues, as a rule, with only short intermissions, until the calculus escapes into the bladder, and the concretion is afterward generally discovered in the urine; the paroxysms also recur at irregular and usually long intervals. The pain of renal tenesmus is less severe and long continued; it comes on more frequently, and the paroxysms, as we have seen, occur several times a day, and often from the most trivial causes. The most important diagnostic feature of renal tenesmus, however, is the facility with which an attack can be excited. When any doubt of the causation of the pain exists, it may be set at rest by making pressure over the ureter where it lies in the vesico-vaginal septum, or by injecting the bladder with warm water in the manner already described. The distinction, thus easily made, is all the more important, because an error in diagnosis, as I have known to occur, may lead the surgeon to perform lumbar nephrotomy and find no stone in the pelvis of the kidney.

Differentiation from Pains in the Ovaries and Tubes.—In the milder cases of renal tenesmus, where the pain is referred to the ureter in one or the other iliac region, and radiates less frequently to the pelvis of the kidney, the pain may be ascribed to ovarian neuralgia or disease of the ovary and Fallopian tube. This error is all the more likely to occur because at times there is no pus in the urine, and hysterical symptoms commonly referred to ovarian irritation may be highly developed; the patient may also describe the pain vaguely as being in the side, as often happens, and her sufferings may be intensified during the menstrual periods. That this error in diagnosis is not a mere theoretical possibility will be seen by the histories of two cases which I will presently report. In one of them the ovaries and tubes were removed a year ago by a distinguished laparotomist of New York; in the second case a Tait's operation was urgently recommended by another. In order to ascertain the cause of the pain the urine should be frequently examined, especially at or about the menstrual periods, the condition of the bladder should be inquired into, and the situation and character of the pain carefully noted; if then any doubt remains, pressure

over the ureter should be tried and the bladder injected with water. The excitation by these means of an attack of renal tenesmus, which the patient recognizes as being identical with the pain she has suffered so long, will at once clear up the diagnosis. May not a more careful and painstaking study of the differentiation between deep pelvic pains, regarded usually as significant of diseases of the ovaries and tubes on the one hand, and the group of symptoms characterizing renal tenesmus on the other, serve to explain the too frequent resort to oöphorectomy as is now believed to be the case by the majority of the profession?

Treatment.—In order to present a clinical picture of our third class of cases, where the inflammation is confined to the bladder and ureter, and is associated with renal tenesmus, I will relate to you the histories of the following cases, together with their treatment:

Case 1.—Mrs. G., æt. 26, a laundress, was admitted into my service in the Woman's Hospital, November 30, 1887. Her symptoms began during her second pregnancy, seven years ago, with pain in the left groin which afterward extended to the corresponding lumbar region. Micturition also became frequent, and she noticed a strong odor and thick deposit in her urine. In 1885, she was under my care for seven weeks. At that time there existed a marked retroversion of the uterus and her urine contained pus. She was treated for the displacement by columning the vagina in the supported knee-elbow position, with ordinary dry cotton; but was unable to tolerate the required pressure, and left the hospital without having received any benefit. She was also under treatment for nearly two years in the out-door department of the hospital, but did not improve. In the spring of 1887, both of her ovaries and tubes were removed by a laparotomist of New York City. She entirely recovered from the operation, and during the past year has only menstruated twice. Her sufferings were not relieved, but rather increased, by this operation, especially those relating to the bladder and head.

When she was admitted into the hospital in November last, she had then been suffering from great vesical irritability for seven years. For five years she had been obliged to get up to empty her bladder many times during the night, and during the exacerbations of her symptoms, which occurred at the menstrual periods, she was unable to hold her urine longer than half an hour. The evacuation of the bladder was usually affected by violent and painful contractions or cramps. After the small amount of urine which she could retain was expelled, pain would ascend from the bladder into the left groin and continue for a few minutes or half an hour. At first the pain was confined to the left iliac region, running upward from the inguinal ring along a line to the lumbar region.

At a later period, when her symptoms had increased in severity, it extended to the groin and lumbar region on the opposite side, and finally to the corresponding hip and down the thigh to the knee. Violent and long continued cramps of the muscles of the lower extremities frequently occurred during the paroxysms of pain. The position in bed which she found the most comfortable was on the right side. (In this respect the case is exceptional; most of the patients lie on the affected side.) Her appetite was poor, and during the menstrual period she suffered most from nausea and vomiting.

On palpation, a point was found in the left lumbar region where moderate pressure caused her to cry out with pain. Vaginal examination disclosed great tenderness at the vesical extremity of the ureter. The uterus was now retroflexed instead of retroverted as previously existed, inclined to the left side of the pelvis, and immovable. A mass of exudation could be felt in the posterior cul-de-sac, all legitimate results of the operation she had previously undergone for removal of the ovaries and tubes. The urine contained a small amount of pus; otherwise, was normal.

On December 9, I made an opening in the bladder immediately in front of the orifice of the left ureter. The night after the operation the patient slept soundly, the first time, she declared, in two years. About ten days after the operation the ureter was searched for and found with some difficulty on account of the great tenderness of the bladder at this part. Catheterization and irrigation of the ureter and pelvis of the kidney were painful. The injection of only a drachm of water through the catheter caused violent paroxysms of pain, radiating down the corresponding hip, thigh and leg. Owing to the extreme pain arising from the passage of the catheter, and my failure to find any pus in the pelvis of the kidney, I gave up the practice after a few trials, not deeming it justifiable under the circumstances.

While the patient remained in the hospital her symptoms steadily improved, the paroxysms of renal pain becoming less and less frequent. Owing to the fixation of the uterus, the use of the drainage instrument was less satisfactory in this case than in any I have treated. My utero-vesical drainage support collected the urine fairly well, but, owing to the pain which it occasioned by pressing up the uterus, it could not be worn. A special instrument, made short so as to occupy the vagina in front of the uterus, was tried. This did not cause pain, but collected only a part of the urine. After the patient, however, got accustomed to the presence of the instrument and learned how to manage it better, very good drainage was secured.

The patient left the hospital after having been under treatment about four weeks. I saw her a

few days ago. She was relieved of all her symptoms. She says she is able to do the hard work of a laundress all day, and sleeps soundly at night. When asked if she would prefer to go all her life with incontinence of urine rather than return to her former condition, she answered, "a thousand times."

In the above case the vesical and renal symptoms were well marked, but the hysterical phenomena which, as a rule, form a prominent feature of these cases, was absent. In the following case they were well developed.

Case 2.—Mrs. M., aged 26, was married at 16, and has given birth to three children. Soon after marriage she began to suffer from pain in the urethra, and a frequent desire to urinate following sexual intercourse, and at this time she first noticed a thick deposit in her urine. During her first pregnancy, nine years ago, these symptoms became worse, and in the later months she began to have pain in the right groin radiating to the region of the kidney. These symptoms continued and were aggravated during her subsequent pregnancies. During the early months of her second pregnancy her urine contained blood. For a long time she complained of pain in the head, and suffered from nausea and vomiting during her menstrual periods, at which time all her symptoms were aggravated. In consequence of her sufferings she became nervous and hysterical. Frequently, at the end of a paroxysm of pain in the ureter and kidney, she would have convulsive movements ending in unconsciousness, which continued for half an hour or more. For the relief of the pain she became habituated to the use of morphine and chloral, and took large doses of these drugs. About two years ago an abscess formed in the right iliac region. It opened into the rectum, and the discharge continued for about three months, when it ceased. She recovered from all the symptoms referable to the abscess except a dull, aching pain in the pelvis.

The patient was brought to me from Texas by her family physician, for the purpose of having her ovaries removed. His opinion as to the advisability of the operation had also been strengthened by that of a laparotomist of New York, who diagnosed a pyosalpinx. I first saw her on March 15th.

On palpation a point of tenderness was discovered in the lumbar region over the kidney. Examination of the pelvis in the supported knee-elbow position disclosed the following: The urethra was much thickened, feeling like a hard rounded cord beneath the finger, and the vesicovaginal septum also seemed indurated and resisting. The uterus was prolapsed and inclined toward the right side. A corresponding displacement of the right ovary existed; it was drawn to the right and imprisoned beneath the uterus. Pressure with the finger on the anterior wall of

the vagina, over the line corresponding to the course of the right ureter, caused severe pain which radiated along the ureter to the kidney and downward to the hip, thigh, knee, leg, and even to the toes. Pressure over the left ureter occasioned little inconvenience. On examining the urine, it was found to contain a moderate quantity of pus.

A few days after the first examination, in order to support the uterus and ovaries and to gradually free them from their confined positions, I commenced columning the vagina with dry cotton in the supported knee-elbow position. I introduced a few pledgets of ordinary cotton, employing very gentle pressure, as is my custom at first in cases where the parts are sensitive. After a few trials this plan of treatment had to be abandoned. The presence of the cotton caused the same group of symptoms which were excited by pressure over the ureter with the fingers.

An attempt was next made to wash out the bladder. When I had injected about three ounces of warm water through a small, soft catheter introduced into the bladder, the patient began to complain of pain. The pain soon became very violent, extending, as usual, along the ureter to the kidney on the right side, and down the thigh to the toes. The paroxysm lasted two or three hours, ending in a hysterical attack followed by a period of unconsciousness.

Failing to benefit my patient by other means, on March 31st, I performed right kolpo-uretero-cystotomy. I was assisted by Dr. J. F. Chauveau, of New York, Dr. Joseph Letcher, of Texas, and my son, Dr. Nathan G. Bozeman, who had charge of the patient after the operation. I made an opening in the bladder about the size of a silver half-dollar, immediately in front of the orifice of the right ureter. The vesical wall was found much thickened and the cavity of the bladder contracted. A utero-vesical drainage support was introduced into the vagina; it collects the urine, and by its use the patient is kept almost perfectly dry.

Since the operation there has been a marked improvement in the patient's condition. She is now entirely free from the attacks of renal pain, is able to sleep all night, and has left off the use of opium and chloral. She can sleep on her left side, which she has not been able to do for two years. Her appetite and general condition have improved, and she is able to go out of doors and take exercise. Nausea and vomiting, which had hitherto been constantly present during menstruation were absent at her last period and the exacerbation of her symptoms usual at this time did not occur. Owing to the elevation of the uterus and ovaries by the drainage support even the symptoms referable to these organs have almost disappeared. In short, now, five weeks after the operation, the patient declares she is entirely re-

lieved and wants to return home. She has increased five pounds in weight since the operation. In this case, owing to the marked and rapid improvement in all the symptoms, I decided not to catheterize the affected ureter and kidney, believing this to be unnecessary. The drainage was almost perfect from the beginning.¹

In order to secure the best results in the treatment of diseases of the bladder and upper urinary passages by the operation of kolpo-uretero-cystotomy, the bladder must be kept free from urine. My practice, as previously stated, is to make the opening about the size of a silver half-dollar. My experience has taught me that an opening in the vesico-vaginal septum of this diameter will contract to the size of the index-finger, depending, of course, upon the degree of hypertrophy the structure has undergone.

But this is not all that is necessary to secure free open drainage and physiological rest of the bladder. The posterior wall of the vagina lies in contact with the fistula and tends to obturate the opening. In the recumbent posture, also, the orifice of the vagina is on a plane about an inch and a half higher than the most dependent part of the posterior cul-de-sac. The urine must, therefore, first partly fill the vagina and bladder before it can escape from the body. Furthermore, in unmarried women especially, where the perineum is intact, a small ostium vaginae prevents free egress of the urine. Another cause of retention in cases of fistula was first pointed out by Jobert de Lamballe; to-wit, extreme anteversion of the uterus. Here the fundus being displaced forward, it carries the superior wall of the bladder before it, while at the same time the vesico-uterine junction is drawn backward by the cervix. In this way is produced a fold in the bladder, and if the fistula be situated high up, it is more or less completely occluded. From some of these causes, it is a matter of common observation that patients suffering from fistula are frequently able in the recumbent posture to retain almost all the urine in the bladder and vagina—as in a common cavity, so to speak. It is evident, when great irritability of the bladder is present and the urine is not entirely drained off, spasms of the organ will persist,

¹ The patient continued to improve until May 28th, fifty-eight days after the operation, when she left New York for her home in Texas, having up to this date gained sixteen pounds in weight. The following is an abstract from a letter to me after her four days' travel in the cars:

"Lampasas, Tex., June 8, 1888. . . . Was sick the first day, but after that got along very well. Did not sit up at all. Had my berth down all the way. Found my family quite well, and delighted to see me looking so well. Have felt real strong since I rested from travelling. Have not felt so well for years. Suffer very little pain anywhere. My friends all think it wonderful that I should have improved so much in so short a time. The instrument is working very well, but the drainage is not perfect, some water seeming to stay in the instrument. . . . I can walk now and sit down with perfect ease; can hardly tell I have the instrument on."

July 16. In a letter of this date from the husband of the patient, he says: "My wife is getting along nicely, and says she will be back in September," that is, for the closure of her fistula. I have performed three more operations for renal tenesmus, now making six in all, with results equally satisfactory, if not more so, than in the two cases here reported.

the tendency to reflux of the urine into the ureters will continue, and the group of renal symptoms and complications which I have described will not be relieved. The case of Mrs. S——, referred to in a previous part of this paper, proves this point in a striking manner. Here kolpo-cystotomy, it will be remembered, had been performed for cystitis five years before, from which only imperfect vesical drainage was secured. But little benefit was derived from the operation, distress about the bladder continued and ureteral and renal complications in the left side developed two or three years afterward. As evidences of the persistence of the spasms and excessive action of the bladder, I found the walls of the latter, five years after the operation, hard, resisting, excessively sensitive under pressure, and about five-eighths of an inch in thickness, with a cavity of scarcely three ounces retaining capacity.

Another and more obvious advantage which follows the use of the drainage instrument is the relief of the discomfort and evil effects of incontinence of urine. It increases the scope of the operation, because without it I would hesitate to open the bladder in all but the graver cases of vesical and renal disease. By its use the patients are made comfortable; they complain of but little inconvenience, and wait with patience until the opening can be closed.

I have made some changes in the drainage instruments since I described them,* the most important of which adapts them for drainage when the patient lies on her side. Drainage is now secured in all positions of the body. At a future opportunity I will give an account of these improvements, and also a modification of the instrument which adapts it to treatment of incontinence of urine in young girls, arising from weakness of the neck of the bladder, together with other practical points resulting from a more thorough study of the subject.

Frequently associated with disease of the bladder and upper urinary passages there are, as we have seen, displacements of the uterus and ovaries. The uterus is generally inclined backward and to one or the other side of the pelvis. The distortion of the bladder near one of the ureteral orifices resulting from the uterine displacement, and in some cases the pressure of the fundus uteri upon the inflamed ureter, tend to keep up the cystitis and to aggravate the ureteral pain. It is therefore important that the uterus and ovaries should be restored to their normal positions. Before the bladder is opened, owing to the tenderness of the urethra and the extreme sensitiveness of the ureter on the affected side, the use of a uterine support or pessary, however soft, is impossible, and in most instances even gentle pressure with a few

pledgets of dry cotton cannot be borne. Fortunately, after the opening is made the uterus tends to be pushed forward by the pressure of the abdominal viscera, in order to fill the space formerly occupied by the bladder, and owing to the rapidly diminishing tenderness of the ureter the vagina soon becomes more tolerant of pressure.

In order, therefore, to secure the advantages of elevation and support of the uterus and ovaries in combination with drainage of the bladder, the drainage instrument is made thick and rounded at its upper extremity, where it lies in the posterior cul-de-sac beneath the cervix uteri. As a uterine support, its mode of action is similar to that of the dry cotton column applied in the manner I use it. The instrument lifts up the body of the uterus, stretches the posterior wall of the vagina, and tends to carry the cervix backward. Not resting against the symphysis pubis, as does a Hodge pessary, but conforming to the axis of the lower part of the vagina, and sustained chiefly by the perineum and vaginal walls, it exerts an elastic pressure upon the uterus. The instrument consequently yields during sudden movements of the organ, following jars of the body or expulsive efforts of the abdominal muscles. The mucous membrane of the anterior wall of the vagina is applied closely to the concave upper surface of the drainage support and sinks into the perforations made in it for the passage of the urine. This gives steadiness to the instrument and increases its efficiency as a uterine support. At first the drain sometimes causes discomfort; immediately after the operation it is necessary to use a very small instrument, and exceptionally, as in the case of Mrs. G——, the form of the drain must be modified.

I have found continuous irrigation and drainage to be of great value just after the operation, and my system of intravaginal drainage has been extended to accomplish this. For the perfection of the system in the application of suction I am indebted to my son, Dr. Nathan G. Bozeman, and Dr. William B. Gilmer, who have recently been deeply interested with me in working up the subject of drainage, and have materially contributed to my success by their experimental work. This system of continuous irrigation and drainage is of great practical importance and has a wide range of usefulness in general surgery, but the further consideration of it, together with the several improvements made in my drainage supports will be the basis of a future paper.

In my paper on pyelitis, so frequently alluded to, I explained sufficiently the method of irrigating the kidney. In cases where cystitis and ureteritis associated with renal tenesmus are present, the indications for the employment of this procedure are not so clear as when the inflammation has extended to the pelvis of the kidney. My experience so far tends to show that physiological rest

*American Journal of the Medical Sciences, March and April, 1888, and Transactions of the Ninth International Medical Congress, 1887.

and drainage of the bladder and affected ureter are all that are necessary when the complication of renal tenesmus alone exists. After the extreme sensitiveness of the parts has subsided, however, the passage of the catheter may be found useful for its tonic effect, as is the case in a similar condition of the mucous membrane of the male urethra; but further experience is needed to settle this point.

Now, a few words about the time which should be allowed to elapse before closing an artificial fistula. All thickening of the vesical walls and tenderness about the urethra, bladder, and ureter must have disappeared. From six to twelve months, as a rule, are required to accomplish these results. Of late I have adopted a useful method of determining this point experimentally. I introduce a large cylinder of hard rubber—one of my intra-vaginal dilators—which obturates the fistulous opening and keeps the urine in the bladder. If the patient can wear this instrument for a week or two without the occurrence of any distress in the bladder, the opening may be closed at once and the bladder allowed to take on its normal functions.

9 West Thirty-first Street.

MEDICAL PROGRESS.

ANCHORING OF THE BRAIN AND SOME OF ITS CONSEQUENCES.—In regard to this DR. WM. MAC-
EWEN, in his Address at the recent annual meeting of the British Medical Association, said: When injury has been inflicted on the surface of the cerebrum, followed by plastic effusion and cicatricial formation, the superficial substance is apt to become soldered to the membranes when these remain intact, which in turn may be soldered to the skull, or in the event of their detachment, the brain may become directly adherent to the bone by means of cicatricial adhesion. Thus the surface of the brain becomes anchored or soldered to its rigid walls. It has no longer the free play within its water bed to expand and contract according to the varying states of the circulation. Each variation produces a dragging of the brain at this spot, and through it the whole hemisphere at least is affected. Any sudden physical effort pulls on the brain, producing a slight shock, a momentary disturbance, just as if the cerebrum had received a blow. Vertigo results. People affected in this way cannot rise up quickly, or perform any sudden motion of the body or head, without experiencing a sensation of giddiness, which sometimes causes them to drop. Consequently, they are often incapacitated from pursuing their usual avocations.

Following upon this, the gray matter of the cortex, immediately surrounding the cicatrix, by

the incessant movement is apt to become unstable and to produce fits. Some cases of traumatic epilepsy are thus caused. Further, if the cortical irritation be continued, encephalitis is occasionally produced, often appearing in a chronic form and long remaining so, though susceptible of being lit up into an acute affection. If the temperature remains high, active interference is apt to induce an extension of the encephalitis. Operation in such cases should be, when possible, postponed. The disregard of this advice has, to my knowledge in one instance, hastened the fatal issue, encephalitis becoming rapidly general.—*British Medical Journal*, August 11, 1888.

INFLUENCE OF PILOCARPINE UPON THE MUCOUS MEMBRANE OF THE TYMPANUM.—At the conclusion of an article on this subject DR. W. KOSGARTEN, of Kiel, says: It seems evident to me that injections of pilocarpine also have a decided influence upon the mucous membrane of the middle ear, and therefore in chronic processes of the middle ear, accompanied by affections of the labyrinth, this remedy acts not only upon the internal ear, but that it can also exert a favorable influence upon the middle ear process. By means of returning hyperæmia, which may even cause exudation, there ensues pliability of the sclerosed tissues, and moistening and softening of adhesions, and in this way the unyielding conducting apparatus again becomes more capable of vibrating; where exudations had become deposited, their absorption was brought about, as could be observed in the membrana tympani of a patient. The reason Politzer found the remedy inefficient in these affections was because he discontinued treatment too soon, for in these chronic processes we cannot accomplish anything except by long-continued action.—*Archives of Otology*, June, 1888.

CHLOROFORM WATER AS A VEHICLE.—UNNA, in *Monatshefte für Praktische Dermatologie*, says that he has found chloroform water an excellent vehicle for the hypodermatic administration of Fowler's solution and ergotin, as it prevents the decomposition of the solution. It is also useful in giving morphia where a local anæsthetic and counter-irritant effect is desired, as in neuralgias. It is equally valuable in the internal administration of drugs which decompose rapidly. Atropine and bichloride of mercury may also be given in chloroform water.—*Med. News*, June 23, 1888.

ABDOMINAL PAIN.—DR. LAUDER BRUNTON (*Brit. Med. Journ.*, June 2) recommends codeine in half grain doses three times a day, increased to a grain if the patient is not relieved. It does not cause drowsiness nor does it interfere with the digestion. In long-continued enteralgia, not due to organic disease, it has continued to relieve pain for months together.

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SATURDAY, OCTOBER 6, 1888.

CONGRESS OF AMERICAN PHYSICIANS AND
SURGEONS.

Our reporter has furnished us with a full report of the doings of the general sessions of this new organization, and of the American Surgical Association, at the recent meeting in Washington. The first general session of the Congress was held at 1 P.M. of Tuesday, September 18, 1888, and was occupied solely with the report of the Executive Committee on plan and purposes of the organization and the By-laws, all of which will be found under the head of Proceedings of Medical Societies in the present number of *THE JOURNAL*.

The second general session was held in the evening of the same day and was occupied chiefly with the subject of "intestinal obstructions." But the papers of Drs. H. H. Smith, T. G. Morton, C. B. Penrose, N. Senn, R. Harvey Reed, and some others, with the discussions thereon, in the Surgical Section of the American Medical Association, last May, and since published in full in *THE JOURNAL*, so fully cover the field of intestinal surgery that we do not find such additional facts or views in our report of this session of the Congress as would justify our using it. The third general session was occupied with the subject of "cerebral localization and its relations to cerebral surgery," a report of which will be found in the present number of *THE JOURNAL*. The fourth and last general session was held on Thursday

evening, Sept. 21, when the President, J. S. Billings, M.D., U. S. A., delivered his Address on "Medical Museums," the most important portions of which were published in *THE JOURNAL* for Sept. 22, ult. Aside from these joint or general meetings in the evening, each of the several associations of specialists held their meetings separately and attended to all their work independently, as in former years.

SEE ON THE TREATMENT OF ANEURISM.

At one of the recent meetings of the Académie de Médecine Dr. Dujardin-Beaumetz read a note on the treatment of aneurism, by PROFESSOR GERMAIN SÉE. The first part of the note relates to the presence of bacilli in aneurism, which is remarked upon as a curious coincidence. The other two parts relate to the methods of the internal treatment of aneurisms.

Professor Sée speaks especially of the treatment of aneurisms by iodide of potassium and antipyrin, the good effects of which are confirmed by Dujardin-Beaumetz. M. Sée shows that the iodide of sodium treatment is theoretical, and has not the good results of treatment by iodide of potassium, which is much superior to iodide of sodium in diseases of the heart and blood-vessels, because in small doses the potash salts, according to Traube, act distinctly on the muscular-motor system, and even on the inhibitory nerves of the cardiac arrest. The potash salts are toxic only when used subcutaneously in large doses. Even in doses of 10 or 15 grams a day, the iodide of potassium is not toxic, and any ill effects must be attributed to the iodine rather than to the potassium.

In regard to the use of antipyrin with iodide of potassium, according to Sée, antipyrin has no bad effect on the heart, but, on the other hand, calms the impulse of the heart, which is generally exaggerated in cases of aneurism, and in this way rather adds to the ease with which coagulation takes place, thus favoring the cure. More than this, antipyrin dissipates the sharp pains, the painful cardiac oppression, and the anginous sensations so frequently associated with aneurism. Dujardin-Beaumetz prefers phenacetin to antipyrin in these cases. It is not so soluble as antipyrin, and must be administered in wafers, but to produce the same analgesic effect as antipyrin one

requires only half the dose. Both Sée and Dujardin-Beaumetz condemn all surgical interference in aneurism of the aorta.

THE NEXT ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

It has been ascertained that, at the time selected for the next annual meeting, *i.e.*, the first Tuesday in June, in Newport, R. I., the chief hotels of that city will not be open for guests, and neither will the summer arrangements for boating excursions be in order. By deferring the meeting until the *last Tuesday* in June all these local difficulties will be obviated, and the State Medical Society of Rhode Island has already taken steps to coöperate cordially with the local committee of arrangements in making the meeting one of the most pleasant and successful ever held. We think the committee of arrangements should not hesitate in making the proposed change in the time for holding the meeting, when it would so obviously add to the comfort of all the parties interested.

EDITORIAL NOTES.

ACETIC ACID AS AN ANTISEPTIC IN OBSTETRICS.—DR. F. ENGELMAN thinks that acetic acid is as much antiseptic as carbolic acid, and has the advantage of being non-injurious, even in a tolerably concentrated form. It has a decidedly styptic effect, which is an additional advantage in midwifery practice, and is very diffusible, penetrating the tissues to a much greater extent than most other antiseptics. Its action on instruments is less prejudicial than that of corrosive sublimate. A pair of forceps may be kept in a 3 per cent. solution of acetic acid for a quarter of an hour without being injured, but an irrigator is liable to injury from prolonged use of acetic acid solutions. After using acetic acid the hands must be washed twice, since soap will not dissolve in the presence of the acid. Engelman generally uses a 3 per cent. solution, though he has used a 5 per cent., which, however, is apt to cause a sensation of smarting in any spot where the surface is broken. In none of the cases in which Engelman used acetic acid was there any abnormal rise of temperature.

LEPROSY TREATMENT IN HAWAII.—It is proposed to establish an efficient hospital, in one of

the most salubrious localities in the Sandwich Islands, for the treatment of leprosy. It is felt by the Government that any attempts at cure must be carried out under the most favorable circumstances, and a physician will probably be engaged who is conversant with and can carry out the treatment advocated by Dr. P. G. Unna, of Hamburg. But so long as the utter indifference to isolation of lepers in the Sandwich Islands continues, any plan of therapeutics must be looked upon as scarcely less than vain. The isolation of lepers is as important to day as it was in the time of Moses. The principles of the Mosaic Code have not been improved upon, and the farther sanitarians get away from them the more they stumble.

MEDICAL LEGISLATION IN NEW ZEALAND.—The new Medical Act Amendment Bill of New Zealand, now under discussion, provides for the creation of a General Council of Medical Education and Registration, to consist of twelve persons. All persons registered in the United Kingdom are to be registerable in New Zealand. Any person assuming a title to which he is not entitled is liable to a fine of £50. Persons representing themselves as registered, but not really so, are liable to the same penalty, as is any person not a registered practitioner, but who practices medicine, surgery or midwifery, using the designation of or representing himself to be a physician, surgeon, doctor, apothecary, professor, specialist, or consultant in medicine, surgery or midwifery.

PUPILLARY CHANGES IN CHRONIC PULMONARY DISEASE are discussed by COMINI in *Annali di Oftalmologia*. He cites histories of nine cases of mydriasis in phthisis. This occurred more frequently on the right side, and coincidently with disease at the apex of the lung on the same side. In some cases it was bilateral. In some cases also the mydriasis was accompanied by photophobia and paresis of accommodation. Rampoldi first described the transitory dilatation of the pupil, and maintained that it was directly connected with temporary aggravation of the symptoms. In Comini's cases there appeared to be no such connection. Rampoldi assigned reflex irritation as the cause, but Comini suggests that the sympathetic may be directly involved in the disease.

ABSENCE OF RIGHT PARIETAL BONE AT BIRTH.—MR. G. WASHINGTON ISAAC records a remark-

able case of a child born without a right parietal bone. Over its site the skin was loose and distended with fluid; palpation produced fluctuation. On pressing the fingers firmly into the margins of the swelling the edges of the surrounding bones could be felt. A month later the site was occupied by bone, except a small circular space about midway between the parietal eminence and the posterior superior angle of the bone. About six weeks after birth this hole filled up. The bone was quite firm, but somewhat nodular, especially over the site of the space the last to disappear. In this case the labor was easy and rapid, and the swelling, which somewhat resembled a caput succedaneum, distinctly increased for three or four days.

PERITONITIS CAUSED BY ROUND WORMS.—**SURGEON-MAJOR R. D. MURRAY**, of the Indian Medical Service, reports three cases of this kind. As the result of his observations in India he has no doubt that the round worm (*ascaris lumbricoides*) is capable of causing perforation of the bowel, and actually boring its way into the peritoneal cavity. These entozoa are very prevalent in Eastern countries and among the dark races generally, and the mortality caused by them is probably greater than is generally supposed. Surgeon-Major Murray says that in times of cholera they are frequently a predisposing cause of the disease.

CREMATION IN ITALY.—The Italian Government, which has done a good deal towards encouraging cremation, has recently applied the principle of protection to dead bodies imported for cremation. Cremation is illegal in France. Not long since a Mr. Morin left instructions that his body should be taken from Paris to Milan, and cremated. The cremation cost about \$3.75, but the Italian Custom House levied \$70 duty on the body when it entered the country, and the same amount as export duty on the ashes when they were taken back to France.

THE LONDON SANITARY PROTECTIVE ASSOCIATION, of which the Duke of Argyll is President, is a society the objects of which are to provide its members, at moderate cost, with such advice and supervision as shall ensure the proper sanitary condition of their own dwellings. The Association has no capital stock, and cannot be used for purposes of profit.

YELLOW FEVER.—Owing to cooler weather the prevalence of the fever in Jacksonville is declining, and much less alarm is felt throughout the South. Light frost has occurred in Tennessee, and snow in some parts of Virginia, and quarantine has been relaxed or discontinued in many places. The whole number of cases reported in Jacksonville, Fla., to Oct. 1st, is 2,725, and the number of deaths 263.

TANNIN IN PHTHISIS.—**DR. DE VITI DEMARCO**, of Otranto, has successfully used tannin for reducing the temperature of phthisis, and finds that it sometimes has a beneficial effect on the course of the disease. He gives the tannin in the form of a pill, every two hours, each pill containing gr. 7.5 of tannin and gr. 0.25 of creasote. Long-continued use of the tannin seems to produce no unpleasant symptoms.

M. CHEVREUL completed his 102d year on August 25. Though he is suffering from no special complaint, he has become so infirm that he is obliged to pass the greater part of his time in bed. He has not been able to attend the meetings of the Institute for more than three months.

THE PROFESSIONAL DISINFECTOR has appeared in some of the European cities. One in London, a Mr. W. G. Lacy, advertises that he is employed by leading London physicians, and has a private carriage for removing infectious cases without publicity.

THE INTERMITTENT GALVANIC CURRENT is said by Dr. J. R. Seymour to be efficacious in case of sting by the physalia (Portuguese Man-of-War). Perhaps it might be efficacious also in other cases of poisonous and painful sting.

SOCIETY PROCEEDINGS.

Congress of American Physicians and Surgeons.

The first Triennial Meeting of the Congress, held in Washington, September 18, 19 and 20, 1888.

FIRST SESSION—TUESDAY.

The meeting to receive the report of the Executive Committee and for organization was held at 1 P.M. Tuesday, in the Grand Army Building.

The meeting was called to order by **DR. WILLIAM PEPPER**, Chairman of the Executive Committee, who spoke as follows:

On behalf of the Executive Committee I have to announce the manner in which we have discharged our responsible duty. The present meeting is the result of prolonged deliberation which began to take shape more than four years ago, before the attention of the medical profession became occupied with preparation for the meeting of the International Medical Congress, but all action was deferred in order that there should not be the semblance of interference with that important meeting. This delay has served to render more conspicuous the necessity for this organization.

In order to produce the best scientific results, it is essential that the numbers in attendance shall be reasonably limited and that, as far as possible, the same men shall attend successive meetings, securing a continuity of intellectual life and activity. A large proportion of those interested in the development of such an organization are, as I am myself, warmly attached to the American Medical Association, and determined to exert their influence to maintain and promote the success of that great National organization.

Your Committee ventures to hope that their provisions will meet the unanimous approval of the Congress. We have recommended that the sessions shall be triennial. We have jealously guarded against the admission of parliamentary business, as the functions of the organization are designed to be absolutely or exclusively scientific. We have also guarded the independent sovereignty of each participating Society.

Lastly, the Executive Committee has reached the conclusion that the selection of the President of each Congress shall be entrusted to the Executive Committee then in office. Close study of the conditions of this Congress has led the Committee to feel that if this organization were to have the effect of favoring the multiplication and subdivision of special societies, it would be nothing less than a calamity. We have therefore provided that the admission of new associations shall be secured only by the unanimous vote of the Executive Committee.

It remains only to add that, in exerting the privilege of selecting a President for the first Congress of American Physicians and Surgeons, we feel that we have been guided to the choice of a man whose admirable personal character, whose high attainments, and whose illustrious services in the cause of literature, of science, and of the entire medical profession, mark him as entitled to this great honor. It gives us, therefore, the utmost gratification to present to you our President, Dr. John Shaw Billings, and to announce that the Congress of American Physicians and Surgeons is now duly organized.

President DR. J. S. BILLINGS then took the chair and responded in a brief address.

The *Address of Welcome* was delivered by DR. SAMUEL C. BUSEY, of Washington.

The consideration of the By-laws was next taken up.

1. This organization shall be known as the Congress of American Physicians and Surgeons.

2. It shall be composed of National Associations for the promotion of medical and allied sciences.

3. It shall hold its sessions triennially in the city of Washington, D. C.

4. The officers of the Congress shall be a President, Vice-Presidents, a Secretary, a Treasurer and an Executive Committee.

5. The President shall be elected by the Executive Committee, of which he shall be *ex officio* a member. He shall preside at the sessions of the Congress. He shall deliver an address.

6. The Presidents of the participating societies shall be *ex officio* the Vice-Presidents of the Congress.

7. The Secretary and Treasurer shall be elected by the Executive Committee. They shall be *ex officio* members of the Executive Committee.

8. The Executive Committee shall be composed of one member from each participating society, and said members shall be elected by the various societies at the next annual meetings subsequent to the Congress. It shall be charged with all duties pertaining to the organization of and preparation for the ensuing Congress, including the election of all officers and of a Committee of Arrangements. It shall superintend the publication of the Transactions of the Congress.

9. The expenses of the Congress shall be divided between the participating societies in proportion to their membership.

10. The admission of new associations to participation in the Congress shall be by unanimous vote of the Executive Committee.

These By-laws were unanimously adopted.
Adjourned.

THIRD SESSION.

DR. CHARLES K. MILLS, of Philadelphia, read a paper on

CEREBRAL LOCALIZATION IN ITS PRACTICAL RELATIONS.

In his introductory remarks, the speaker referred to the fact that from the clinical observation of practical physicians sprung the conceptions out of which developed the science and art of cerebral localization. Allusion was made to the discoveries of Bouillaud and of Broca in speech localization; to the announcement by J. Hughlings Jackson in 1864 that certain convolutions superintended the delicate movements of the hand which were under the immediate control of the mind, and to Hitzig's researches having originated from his observing certain ocular movements during galvanization of the heads of his patients. Brief reference was made to the history of Amer-

ican work in localization; to the investigations in 1874 of the New York Society of Neurology and Electrology; to Putnam's discovery that irritation of the white matter beneath definite cortical centres produced movements similar to those caused by irritation of the centres themselves; to the labors of Wood and Ott on the head centres, and to the light thrown by these investigations upon the mechanism of fever and the action of drugs upon different forms of high temperature.

Trephining for cases of insanity, particularly when guided by the rules of localization, was briefly considered. Two of the recent cases of brain operation reported by Bennett and Gould and by MacEwen were cited as possibly opening a new field for surgical interference in insanity, the excision of cortical areas as a method of treatment when certain subjective phenomena such as hallucinations of sight or hearing can be given a local habitation in the brain.

In turning to the surgical aspect of cerebral localization in its practical relations, the author stated that his remarks would be chiefly concerned with questions of diagnosis. The forms of disease in which such diagnosis has been used are intracranial tumors, cysts, fractures, hæmorrhages, abscesses and discharging cortical areas.

In considering the localization of brain tumors, Dr. Mills referred to twenty cases of autopsies occurring in his own personal experience, in about one-half of which the tumors were in surgically accessible areas, and in at least one-fourth of which successful operations might have been performed. He advocated from this experience the excision of old gummata, and also, in special cases, of tubercular growths. The value of localization was shown in cases of fracture where the extent of the unseen damage could not be told by the position and character of the visible lesions.

Of the different forms of intracranial hæmorrhage, subdural, cortical and intracerebral were most amenable to localizing diagnosis. The rules for the local diagnosis of these forms of hæmorrhage were then given. Dr. Mills advocated the performance of trephining in exceptional cases of hæmorrhage into the ganglia and capsules; cases in which symptoms indicated that the bleeding had not broken into and inundated the ventricles. From the sections, the best site for operation in such cases, all things considered, would be in the anterior portion of the first or second temporal gyrus. He favored Hughlings Jackson's suggestion of excising localized cortical areas even when coarse lesions could not be made out, in cases of spasm beginning locally or deliberately.

The inaccessible areas had been narrowed down by the venturesome surgical explorer, and had become reduced to the middle regions of the base and its bordering convolutions, the corpora quadrigemina and the pons oblongata.

The characteristics of localizing symptoms were

described as phenomena of irritation, destruction, instability, pressure, invasion and reflex action. Signal symptoms and the serial order of motor phenomena were discussed. Briefly, in certain regions of the brain an accurate topographical diagnosis could be made with great certainty from positive localizing symptoms. These brain areas include the entire motor zone, in which are embraced the motor or emissive speech area, the region of Broca; the visual area in the cereus, giving lateral hemianopsia, and the intracerebral visual tracts; possibly, also, the angular gyri and the lateral surface of the occipital lobe. In other regions of the encephalon the topographical diagnosis could be made with sufficient accuracy even for surgical purposes, by the study of the positive symptoms with, in addition, the application of processes of exclusion and successive differentiation. Particular stress was here laid upon the importance of pressure and invasion symptoms. These areas for approximately certain topographical diagnosis include the cerebellum, the prefrontal lobe, the temporal lobe, and even certain cranial nerve districts, as the auditory and facial when the lesion could be localized within the cranium between the superficial origin of the nerves and their entrance into their foramina or canals of exit.

Motor localization had become almost an exact science. The latest physiological research bearing upon the subdivision of the motor area, and the light thrown upon the question by surgical operations, were discussed. It was held to be imperative for the neurologist and surgeon to have exact knowledge, not only of the anterior and the posterior limits, but also of horizontal subdivisions of the motor zone.

The old method of dividing the motor zone into three elliptical or circular areas, from above downward, was considered insufficient; but the neurologist should be able to locate for the surgeon, from a study of motor phenomena, at least seven or eight positions for trephining; these positions being selected by a close study of the initial or signal symptoms, the serial order of movements, and also of the amount and character of the temporary paralysis after the seizure and the method of extension of the persisting palsy.

The view of Ferrier as to the localization of the centre for ocular and head movements in the second frontal gyre was concurred in, and observations were cited in its support; when turning of the head and eyes was the starting point of the spasm, this localization was probably indicated. The fact that cortical oculo-motor palsies were not present as a persistent condition even with definite lesions of the second frontal gyre, was explained by the intimate and peculiar connections of the oculo-motor nuclei at the base; they do not persist for the same reason that paralysis in the upper distribution of the facial nerve is so seldom

permanent. He believed that there was a special centre for the *orticularis palpebrarum* movements, probably below and adjacent to the oculo-motor centre.

Dwelling upon the sources of error in motor localization, the question of reflex spasm, of unilateral convulsions due to uræmia, lead, and other toxic agents, and to hysteria and hystero-epilepsy, were briefly discussed. Sufficient diagnostic difficulties are still present to make it important in the light of the tremendous impetus towards operation, to carefully examine all questions of differential diagnosis. In certain spasmodic affections, the resemblance between those clearly of reflex origin and those as demonstrably central, were very striking. Trigeminal epilepsy, whether dural, facial, dental, nasal, pharyngeal, laryngeal, or of whatever local origin, might cause unilateral convulsions, or even mono spasm. Dural epilepsies are especially worthy of attention, as shown by the researches of Dupuy, Burdon-Sanderson, Brown-Sequard, the New York Society of Neurology and Electrology, Duret, Boche Fontaine, and François Franck. Franck has made a careful comparison and contrast of cortical epilepsies with those which are reflex and toxic, including those which are due to irritative lesions of the dura mater.

The author referred to five cases in his own experience in which operations had been performed for epilepsies apparently reflex in character: two in which spicules of bone had been removed from the dura mater, one in which an old inflammatory lesion of the membranes and cortex from traumatism, was present, and two in which scalp cicatrices were removed. While fearing, with Franck, that we were not always able to make a trenchant separation between reflex and cortical epilepsies, some points of separation were indicated. True Jacksonian epilepsy, Dr. Mills believed, was sometimes reflex in origin, that is, that it was established by intense, persistent peripheral irritation; and even after the irritation had been removed, the cortical discharge continued; herein perhaps lays the explanation of Jacksonian spasm without coarse lesion; and herein also, perhaps, was to be found the justification for the excision of cortical discharging areas. The author referred to a case in which epilepsy clearly of Jacksonian type was just as clearly due to a fibroma involving a nerve trunk on the palmar surface of the hand, and in which the patient was cured by removal of the growth.

With reference to sensorial localization, cutaneous and muscular, the views of Horsley and Schäfer with reference to the limbic lobe were accepted in part. The speaker believed that the evidence was becoming stronger every day in favor of the existence of a zone for the sensations of touch, pain and temperature separate from cortical motor areas. Collections of cases, such as those of Starr,

Petrina, and others, which were supposed to indicate that the sensory areas coincide largely with those of motion, were not regarded as overcoming the positive evidence of decided destructive lesions of the cortical motor zone without any sensory disturbance. From a study of his personal cases, he had concluded that they did not support the doctrine that the motor and sensory areas coincide. Notes of these cases were given, and also cases from other reporters. He believed, with Bechterew, that the loss of sensation in animals who have had the motor area destroyed, was apparent and not real. Some light had been thrown upon this disputed question by careful examination of patients after operation, particularly when certain definite dural areas had been clearly excised. Reference was made to the cases of Horsley, Weir and Seguin, Lloyd and Deaver, and others. The speaker believed that these observations and experiments pointed clearly to the theory that the motor zones were motor alone in function. His view was, the region for general sensation, including touch, pain, temperature, and perhaps pressure, location and muscular sense, could be divided into special areas for the various distinct portions of the body, and that these centres lay alongside and had close anatomical and morphological relations with corresponding motor centres, but that they were not identical with them. He located these sensory areas in the *gyrus fornicatus*, the hippocampal gyre, the *pre-cuneus*, and the lateral postero-parietal region.

The practical conclusion was that the neurologist and surgeon must depend upon motor symptoms alone in fixing the site for operation in cases where the motor lesions were definite. When positive sensory symptoms were present they might sometimes serve to aid in locating more exactly the position for operation, but the data were not sufficient for positive reliance. The question of morphological peculiarities of the human brain was briefly alluded to as having some practical bearing upon the subject under discussion. The position of the so-called angular gyre and aberrations in the parieto-occipital region, were more particularly discussed. Even the fissure of Sylvius, the central and parieto-occipital fissures sometimes present considerable variation, but, as a rule, such aberrations were not confusing in operating on the motor region after the methods of Broca, Thane, and others.

DR. ROSWELL PARK, of Buffalo, N. Y., read a paper on

CEREBRAL LOCALIZATION IN ITS SURGICAL RELATIONS.

The following is an abstract:

Cerebral Topographical Anatomy.—The areas which most concern the surgeon are those which cluster around the fissure of Rolando. A few bony prominences deserve attention is this con-

nection; that at the point of the nose, known as the glabella; the external occipital protuberance, known also as the inion; the point of the cervix half-way between these two, the bregma; the external angle of the orbit, the tip of the mastoid process, and the lower border of the alveolar process of the upper jaw. The fissure of Rolando has its upper end about 5 centimetres back of the bregma, but does not run quite in the middle line, its lower end lies about $\frac{1}{2}$ centimetre behind the auricular-bregmatic line and a little above an imaginary line projected backward from the superciliary ridge, thus the lower end of this fissure will be found about 6 centimetres above and a little behind the external auditory canal, or about an inch behind the bifurcation of the fissure of Sylvius. In regard to the convolutions, it must be stated that lesions of the dura-mater overlying motor areas are not always to be distinguished from lesions in the cortex beneath. It is enough for the surgeon that a lesion of some kind can be located with reasonable accuracy. It matters not whether this is an old, irritative lesion; an acute suppurative process between the bone and the brain, or an abscess or tumor of the brain itself. The indication for exploration is just as strong in either case.

When and Where can one Trephine with Safety.

—The safest rule is to first apply the trephine over those areas which do not overlie large vascular channels. Afterward the opening may be extended in any direction and to any required extent. The greatest hesitation is with regard to opening one of the sinuses. Two dangers attend such an accident, one fatal air embolism, the other profuse hæmorrhage. The former danger is almost a theoretical one, and the other may be overcome by plugging the sinus or closing the wound with a fine needle and suture.

Cerebral and Cerebellar Abscess.—Bergmann has shown that abscess of the brain has but one result—death—and that the surgeon's knife offers the only relief. So far as we know there is no such thing as idiopathic abscess of the brain. It is always the result of some external wound of the head or some extension from diseased surrounding bone. The only exceptions to this statement are to be found in the case of pyæmic or tuberculous abscess. The symptoms of deep brain abscess may be divided into three groups, according to causes. 1. Those which are inseparable from indications of suppuration. Such are those disturbances which may follow any deep-seated foreign body. 2. Symptoms of increased intra-cranial pressure and of disturbed relations. 3. Special symptoms by which the locality of the disturbance may be ascertained. So long as the gray matter is undestroyed, the collection of pus may assume large dimensions and still no intense motor symptoms appear. Local elevation of temperature over the abscess is a symptom of importance when

present, but its absence need not negative a diagnosis if made on other grounds. Wernicke has stated that there is a peculiar disturbance of speech which points to a lesion of the temporal region. This is the confusion of correct with incorrect words. In the general diagnosis of cerebral abscess it is to be remembered that there usually is a latent period which may continue for an indefinite period. The stage of active symptoms is usually ushered in by more or less headache, and slight rise in temperature. Local or motor symptoms can only be expected when the abscess is in the motor area of the brain.

In operating for abscess of the brain, operators until recently have satisfied themselves with incising the dura and doing nothing more. With the introduction of aspirating methods the hollow needle came to be used for brain exploration. The dangers of this procedure are certainly small. The danger of hæmorrhage has been overestimated. A temporary tampon will control deep hæmorrhage, while in bleeding from the pia-mater the vessels may be secured with ligatures or serrafins. In brain abscess consequent upon middle-ear disease, the best point to trephine, according to Bergmann, is above and behind the ear. Macewen proposes a second counter-opening on a level with the floor of the abscess.

Brain Tumors.—The principal features of these growths which produce symptoms are location, size, character, rapidity and manner of growth, and extent to which they affect surrounding brain tissue. Considered in their surgical relations we may, with Bergmann, divide them into (a) the circumscribed, or encapsulated, and (b) the infiltrated, or diffuse, around which, as a rule, there is a zone of softening. A third class may be mentioned, *i. e.*, those growing from the interior of the cranium, from the bone or dura.

If a reasonably satisfactory diagnosis can be made it must be indeed an extensive growth of the cranial vault which shall contraindicate operation. The question of what and how many brain tumors are operable has been best answered by White. He found in one hundred brain tumors met with in the dead-room of Guy's Hospital, that only nine could have been removed—one tuberculous nodule, four sarcomas, two undetermined tumors, one cyst, and one myxoma. Nine per cent. could have been attacked, providing a fairly accurate diagnosis had been made. Of these nine tumors, five were located in the cerebellum, one in the frontal lobe, and one in the extremity of the occipital. It is doubtful whether these seven could have been recognized accurately enough during life to justify operation, while the myxoma was impossible to diagnose. It is thus seen that by no means all tumors which can be diagnosed can be deemed suitable for operation.

Operation for Intra-cranial Tumors.—The head should be shaved two or three days before opera-

tion, washed with green soap and ether, and antiseptic compresses applied. Chloroform should be, as a rule, the anæsthetic, on account of its contracting influence on the vessels of the brain. Morphia, hypodermically, and ergot may be resorted to for the same purpose. The author suggested that after localizing the lesion, a small, disinfected, headless tack be driven through the scalp into the bone at the point determined upon. After the dissection of the external flap this will point out accurately the point to be first attacked.

In order to prevent hæmorrhage, the author had found a spray antipyrin solution (1:40) of service. The semi-lunar flap is the proper-shaped one to raise. Its apex should be in such a position as to allow of drainage with the patient on his back. The periosteum should preferably be raised with the flap. The use of the trephine is preferable to the hammer and chisel. Since Macewen has taught us how to preserve the fragments of bone and restore them to their place, his method has been widely tried and universally commended. The dura mater should be incised around a large part of the area at a distance of $\frac{1}{8}$ to $\frac{1}{4}$ inch from the edge of the bone. The appearance of the dura is sometimes a guide to trouble beneath. In recent cases it is sometimes highly vascular; in old cases it may be yellowish or discolored. Wherever adherent it should be freely excised. Horsley claims that marked protrusion of the dura indicates pathological intra-cranial tension. The color of the brain should be noted, remembering that the cerebellum has normally a different appearance from the cerebrum. Sometimes where there is uncertainty as to which convolution is the desired one, the battery may be employed. Where no indication of lesion is found, further exploration may be conducted with a small aspirating needle or a blunt probe.

Should a tumor be discovered the incisions for its removal should be made perpendicularly to the cortex, for the purpose of avoiding hæmorrhage and division of the conducting fibres. Removal of a layer of cortex whether normal or abnormal, does not leave, as one might fear, a prominent gap with vertical sides, since in a short time the depressed portion is made to bulge almost to the level of the intact parts surrounding. In addition the cut edges are slightly everted and if less brain is removed than bone the edges are extended into the opening in the skull; thus there is a continual normal tendency to hernia, but Bergmann and others have shown that this tendency to hernia-cerebri is in inverse ratio to the area of bone removed. Experience has taught that it is wise to remove brain tissue to an extent greater than was at first considered justifiable. In all operations for epilepsy the portions of cortex nearest the evident lesion should be freely removed.

The matter of drainage must be determined according to the circumstances of the case. An

abscess must be drained as long as pus is discharged. After the antiseptic removal of a tumor the cavity should seldom be drained for more than twenty-four hours. The provision for drainage may be removed on the second day, and the wound dressed with reasonable pressure over the flap. Exudation naturally collecting in this cavity will be retained, and will give rise to some pain and disturbance, but so long as the symptoms from this are not severe the wound may be left with confidence that the fluid will be reabsorbed and that the pressure will be the best check to protrusion.

Dangers of the Operation.—The principal immediate dangers are two: hæmorrhage and oedema. Hæmorrhage from the pia or from the brain substance is usually readily controlled, but disastrous hæmorrhage may occur from unexpected sources. When there is bleeding a temporary tampon of iodoform gauze may be applied. The dural and skin flaps are laid over this and an absorbent dressing applied. At the end of forty-eight hours this may be removed and sutures inserted.

The second danger, that of acute brain oedema, may be brought about either by increase of intra-arterial pressure, or by obstruction of the venous channels of escape. Under this accumulation the brain becomes more sodden. Removal of a portion of the cranium is virtually a diminution of the pressure normally exercised on its contents, and is often followed by reaction with production of excess of fluid.

The author had collected reports of 63 cases which were presented in summary and in tabular form. Seventeen of these terminated fatally, although only 5 of these deaths could properly be attributed to the operation. Fifteen of the cases were abscesses, subdural or subcortical. In 11 cases the lesion was a tumor, exclusive of tubercular nodules. Of cysts, properly speaking, there were 12. The 25 other cases were of a miscellaneous nature. In three cases the true character of the lesion was not revealed during the operation, and was only discovered at the autopsy. In two cases in which no palpable or visible lesion was discovered at the time of operating, the symptoms which led to the performance of the operation were nevertheless relieved, though nothing but careful exploration was practiced.

Of the 63 operations, 17 were performed by American surgeons. Those who have themselves operated more than once are, with the number of their operations: Macewen, 12; Horsley, 11; Bergmann, 4; Weir, 3; Keen, 3; and Parks, 3.

DR. DAVID FERRIER said that he took special pride and satisfaction in the fact that this subject had been assigned such an important place in this great gathering of the profession in this country. He had long cherished the idea that the determination of the functions of the brain would in time

lead to the successful treatment by surgery of some of the most distressing ailments of our fellow creatures. When he first broached the possibility of this he received little encouragement, but now cerebral surgery had become a distinct branch of the art of surgery. There is a great future for cerebral surgery. We must, however, be cautious, lest we do things which our better judgment and larger experience may not consider altogether justifiable. While there have been many successes, yet there had been some failures. He alluded more particularly to cases of Jacksonian epilepsy. The discharging lesion has been removed in many of these cases without permanent cure. Care must also be taken that in curing one affliction we do not induce a greater evil. There is yet much to be learned in regard to the functions of the brain and in regard to the diagnosis of cerebral disease.

MR. VICTOR HORSLEY described briefly the results of his experiments upon the motor region. He believed that here three functions were clearly represented. 1. The representation of the so-called tactile sense; 2, representative of the so-called motor sense; and 3, the great representative of movement. It is found that morphologically the large cells in the fourth layer are concerned in the representation of movement, and he could not understand why we should not allot to the small cells in the upper layer the representation of sensation. He had divided the motor region into minute areas and studied the effect of irritation of these separate areas. He had found that the representation for any part was not limited to one minute portion of the brain, but that there was a focal point where it was strongest, and then it gradually diminished as we passed outside. In his different experiments he had met with certain points of difference. These were attributable to the employment of different species of monkeys. He now uses only the bonnet monkey, and for all practical surgical purposes the results are perfectly applicable to man.

Experiments performed during the past summer had enabled him to prove that the convulsions of so-called Jacksonian epilepsy were solely due to the cortex, and not at all dependent upon the spinal cord or upon the bulbar spinal system.

In cerebral surgery we practice simply the ordinary rules of surgery. In cutting out the bone, a 1-inch trephine should be first used to determine the thickness of the skull. The surgical engine may then be used to cut almost through the portion of bone to be removed. The bone may then be removed with strong forceps. The dura mater should be first separated. If nothing is found and the operation is an exploratory one, the dura mater should be opened. If we purpose to use Faradism for the recognition of certain areas, it is important that the ordinary antiseptic solutions should not be applied to the brain, for they tend

to prevent the response to the electric current. Parenchymatous hæmorrhage may be prevented by the use of morphia. The ligature must be always applied if possible; never pack the wound. In regard to the recurrence of epilepsy in operations performed for the relief of this affection, he considered that the recurrence was due to incomplete operation. In those cases in which he had removed to his own satisfaction not only the lesion but the surrounding brain substance for at least 1 centimetre, there had been no return. He agreed with the previous speaker that there was danger of doing too much in certain cases.

DR. M. ALLEN STARR, of New York, said :— It is evident from the statements just made that cerebral surgery has a great future, but is dependent on neurology for its guide. The burden of responsibility for future progress rests upon physicians, for diagnosis must precede operation. The great discoveries in cerebral localization made in the past, have been reached by means of the collection and analysis of large numbers of cases of localized disease in man, rather than through physiological experiment. Future advance must be in the same line. Hence the importance, too much overlooked in this country, of recording carefully every case of cerebral disease. And to be properly recorded it must be carefully examined. This is especially necessary in the cases of disturbances of speech.

The history of aphasia presents three epochs : First, that of Broca, in which the fact was established that lesions of the third frontal convolution on the left hemisphere produce aphasia. Secondly, that of Wernicke, in which a distinction between sensory and motor aphasia was drawn, and the former was shown, in a few cases, to be due to lesion of the first temporal convolution. Thirdly, that of Charcot, in which the four mental elements of speech were carefully separated. Charcot says, "A word is a complexus; in it we can discover, in persons of education, four distinct elements; the auditory memory picture, by whose means we are able to grasp the sense of words heard; the visual memory picture, which enables us to comprehend the words written or printed; and also two motor elements, the motor memory of articulation, and the motor memory of writing; the first developed by the repetition of movements of the tongue and lips necessary to pronounce a word, the second by the practice of motions of the hand and fingers necessary for writing." Each of these memories being distinct, can be lost. The result is disturbance of speech, whose forms vary. The loss of visual memories produces verbal amnesia and word blindness; the loss of auditory memories causes word deafness; the loss of motor memories of writing results in agraphia; the loss of motor memories of pronunciation produces motor aphasia. Individuals differ largely in the degree of cultivation of each of these mem-

ories, and hence suffer differently when affected by their loss, *e.g.*, the literary man presenting far more symptoms than a common laborer when his memories of things read are lost. Another fact of importance is the independence of speech and thought. Aphasics may retain their musical faculties, and may sing when they can not talk. Thinking, though largely done by the aid of speech, is not dependent upon it. We have memory pictures of the shape, form, sound and odor of objects, independent of their names, and unless these are intact in the brain, the perception of the object does not produce recognition of its nature or use, and does not awaken the memory of its name. The condition termed apoaxia, is found with aphasia in some cases, but not in all.

Turning from clinical distinctions to pathology, the localization of the various memories necessary to speech, was discussed. Motor aphasia is produced by lesions in Broca's centre, or in the tract from that centre to the cranial nerve nuclei. If it is due to lesion in the latter, it is temporary and accompanied by other local symptoms. The situation of the lesion producing motor agraphia is uncertain. Word deafness is due to lesion in the first temporal convolution, and is associated with word blindness when the lesion extends to the supra-marginal convolution and angular gyrus. All the cases of pure sensory aphasia in which the lesion was limited to these parts (41 in number) were collected, and a chart of the brain was shown to support the localization stated. The condition of apoaxia was shown to accompany lesions situated in or beneath the angular gyrus.

The integrity of the connecting tracts between the various memory-centres is also necessary to the act of speech. These can be tested; thus repetition after another, copying, writing at dictation and reading aloud, are acts involving two separate areas and their connecting tract. Lesions of these tracts produce disturbances of speech, some of which Licktheim has described. But cases have not yet been sufficiently well tested to warrant any conclusions. The necessity of careful examination of all cases to detect various defects was dwelt upon, and the speaker closed by indicating how readily accessible to surgical interference the speech areas of the brain are.

DR. W. W. KEEN, of Philadelphia, compared the head cavity to the other cavities of the body. The brain may be considered to be made up of a number of viscera having separate and distinct functions, and each of which has its own physiological signs and symptoms. While we should be careful not to do too much, we should not err in the other direction. The timidity with which the surgeon formerly approached the abdominal cavity was remarkable; the boldness with which we now attack lesions of this cavity, is almost appalling, and the success equally gratifying. This history will be repeated in the case of the brain.

DR. ROBERT F. WEIR, of New York, had, since 1883, operated in ten cases of brain surgery: three times for tumor, three for abscess, twice for hæmorrhage into the cerebrum where there was no external injury to indicate its locality; once for epilepsy, and once for cerebral pain. In the last case the tumor was so deep that there was nothing to indicate its presence after the brain was exposed. It was one and a half inches below the surface. The growth proved to be a sarcoma. The operation was done last November. The patient is still living, but there are signs of a recurrence of the growth.

Bergmann says that operation should not be performed when the patient is in coma, or when the tumor is large. Dr. Keen has removed a tumor weighing over four ounces, with recovery, and Mr. Horsley has removed, with success, a tumor weighing four and a half ounces, from a patient in a state of coma. Sometimes, although no tumor is found, the operation causes disappearance of the symptoms by relieving the pressure. This might be applicable in apoplectic hæmorrhage when the clot could not be removed.

I have gone over the brain to find what parts are accessible to surgical interference. We are able to strip up the longitudinal and lateral sinuses to a considerable extent. The dura-mater may be separated for a considerable distance from the bone. He had been able to raise up the frontal lobes so as to see the anterior clinoid processes, and he had been able to feel the foramen magnum.

American Surgical Association.

Annual Meeting, held in the Main Hall, Grand Army Building, Washington, D. C., September 18, 19, 20, 1888.

(Continued from p. 460.)

TUESDAY, FIRST DAY.—AFTERNOON SESSION.

The Association was called to order at 2 P.M., by PRESIDENT AGNEW.

NICHOLAS SENN, M.D., of Milwaukee, read a paper on

THE RELATION OF MICROÖRGANISMS TO INJURIES AND SURGICAL DISEASES.

The paper was so extensive that in the limited time allotted to its consideration, the author was able to refer to but a few of the points which it contained. At the present time no argument is required to show that many special conditions are due to the presence of bacteria. In regard to the so-called hereditary transmission of disease, the author held that the specific microbes of the specific diseases are transmitted directly from parent to child. In evidence of this he referred to cases of so-called hereditary osteomyelitis in

newly-born infants. In other cases while this same origin may be inferred we have, as yet, no direct evidence that such is the case. In regard to the questions whether or not pathogenic microorganisms exist in the healthy body, while the results of some observers point in this direction, the results of others are opposed to the existence of pathogenic organisms in the healthy body. The conclusion was that under certain circumstances, pathogenic organisms might be present. There is proof of this in cases in which after accidental injury there is localization of these pathogenic organisms. Acute suppurative infectious osteo-myelitis following slight injury or exposure was cited as an illustration of this fact. This localization is favored by certain anatomical conditions. The antagonism among microorganisms was being considered when the time of the author expired.

DR. ROSWELL PARK, of Buffalo, had done some work in this direction. He had examined pus from fifty-two sources, and presented a table showing the number of cases in which pyogenic bacteria were found.

He had also prepared culture media with various antiseptics in different proportions, including carbolic acid, iodoform, iodine naphthaline, hydro-naphthal, resorcin, trichlorophenol, creolin sulpho-carbolate of soda, boric acid, perchloride of iron, antipyrin, antifebrin and quinine. Almost the only one of these antiseptic jellies as thus prepared which has presented all growths was hydro-naphthol, 1:100. This shows that hydro-naphthol can be relied upon as antiseptic. Many of the bacteria grow freely on iodoform jelly 1:100. Those which grew abundantly on iodoform jelly grow slightly on oxide of zinc jelly 1:100. Oxide of zinc was considered a better solid antiseptic than iodoform. The author thought that our present knowledge permitted us to associate certain bacterial forms with definite pathological lesions. In conclusion he presented the report of a case of abscess of the face in which he found the micrococcus tetragens. So far as he knew this microorganism had never before been found in phlegmon in man.

DR. WM. H. CARMALT, of New Haven, remarked that there was only one point to which he wished to refer, that was reference to the alleged microbic origin of tumor. A great deal has been said in regard to the microbic origin of cancers and other tumors. He thought that the division of Virchow's class of granulomas into a class of tumors by themselves, known as infectious tumors, is correct. This class includes tubercle, syphilomes, lepra, lupus, actinomycosis and myelitis. These growths should be taken out of the class of tumors and assigned to a class by themselves. He had been unable to convince himself that tumors proper have a bacteriological origin.

DR. N. SENN in concluding the discussion, said that the diseases enumerated in his paper included only those in which the specific cause had been isolated, cultivated outside of the human body, and in which the injection of this culture produce identical lesions. When these three things are done we have furnished positive proof that the disease is due to specific germs. Another class of diseases had been alluded to in the paper in which there was reason to believe from analogy that the affection was due to specific germs, although the three conditions above referred to had not, as yet, been fulfilled. So far no one had been able to show that the supposed bacillus of syphilis was the specific bacillus. That it is a specific disease cannot be doubted; that it is due to a microbe cannot be doubted, but to establish this positively, experimenters must do what Koch did before he announced the specific origin of tuberculosis.

He was firmly convinced from his observations that tumors, in the true sense of the word, were not due to microbes. He had made tumor implantations for many years in animals and in justifiable cases in man, both close to the original seat of disease and at remote points, without obtaining the least evidence of the *microbic origin* of disease.

DR. W. W. KEEN, of Philadelphia, then read a paper entitled

THREE CASES OF BRAIN SURGERY.

The first case was one of removal of a large tumor from the brain; the second trephining for old depressed fracture followed by epilepsy, with removal of underlying brain substance; the third was the removal of the cerebral motor centre for the left wrist and hand for epilepsy. The three patients were presented.

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Abortive Treatment of Gonorrhœa—Mortuary Statistics—Artificial Suppression of Menstruation—Treatment of Retained Placenta—Cataract of Glass-makers.

Dr. Mauriac, in a note on the treatment of gonorrhœa, has summarized his conclusions as follows: 1. The abortive treatment is indicated and has some chance of succeeding in acute gonorrhœa only during the first hours of its outset. 2. All the attempts to cut short an attack of gonorrhœa during its period of progression and when it reaches its height are useless or dangerous, one obtains only delusive cures. 3. The antiseptic practice at once (*d'emblée*), suggested by the mi-

crobian theory of gonorrhœa, has till now produced only delusive results. 4. It is indispensable to submit acute gonorrhœa to an antiphlogistic treatment until the almost complete disappearance of the most inflammatory phenomena. It must proceed to the proper stage of maturity before any repressive medication should be had recourse to. 5. This latter gives decisive and durable results only in the involutive phasis of the specific catarrh. 6. The agents of repressive medication are copaiba and cubebs internally, the sulphate of zinc in injections. 7. The balsam should be given first; it sometimes of itself produces a definitive cure. In the greater number of cases, while continuing its use, astringent injections may be resorted to. 8. The duration of the repressive medication should be short. Should it not soon give the results expected of it, it must be given up and antiphlogistics resorted to. 9. It is by the antiphlogistic medication that the treatment of acute gonorrhœa imperfectly cured should be commenced. These cases which return almost incessantly are seldom or never subdued in a definitive manner.

Every year the Registrar of the Morgue furnishes a report of the number of bodies deposited there, the cause of death, the kind of death, etc. In 1886 the Morgue had received 932 bodies, in 1887 928. The figure 928 is decomposed as follows: Men, 545; women, 172; newborn infants, human débris, 153. In 1886 there were 329 suicides, of which there were 259 men, 170 women; 180 homicides, 60 men, 120 women; 89 accidents, 70 men, 19 women; 74 sudden deaths, 46 men, 28 women; 360 from unknown causes, 300 men, 60 women. In 1887 there were 338 suicides, 265 men, 73 women; 75 homicides, 57 men, 18 women; 90 accidents, 80 men, 10 women; 80 sudden deaths, 50 men, 30 women; 345 from unknown causes, 285 men, 60 women. As regards the kind of death the report gives: Submersions, 398; natural deaths, 70; run over by carriages, 60; railway accidents, 28; other accidents followed by sudden death: 67 falling from a height; 40 from asphyxia; 37 from firearms; 15 from cutting instruments; 20 from poisoning; 8 by hanging; 58 from electric shocks; 5 from homicides by divers arms; 50 from burns; 20 from blows; 20 by criminal abortion; 2 uncertain; 30 from diseases. The month which furnished the greatest number of bodies is the month of May, that which furnished the least is the month of December. As regards suicides, bachelors furnished the largest contingent, then came married persons and, thirdly, widowers.

We do not often hear of the artificial suppression of menstruation being employed as a therapeutic measure. According to a note reproduced in the *Revue Obstétricale et Gynécologique*, Dr. Loewenthal, of Lausanne, relates the history of twenty-three cases in which this measure had

been employed with advantage in chlorosis. The method employed consisted in injections of hot water of the temperature of at least 49° C., with complete rest in bed. In some very rare cases, iced water was employed preferably to hot water. In eighteen cases the remedy was employed for pure chlorosis. The five others comprised two cases of grave hysteria and three of convalescence from exhausting maladies. In these latter the convalescence was shortened. One of the hysterical patients received a marked advantage, and all the chlorotics were cured with surprising rapidity, and without ulterior medication, after from three to five menstrual suppressions. No grave consequences were noted.

In the treatment of retention of the placenta Dr. Pinard, a well-known obstetrician, remarks that it is important, in the first place, to ascertain the condition of the uterus. This may be voluminous, ill-defined, or it may be retracted, consistent. In the first case the retention is caused by inertia, in the second by the premature retraction of the womb. To overcome the inertia of the organ, and to provoke its contractions, Dr. Pinard advises intra-uterine irrigations of very hot water, of a temperature of from 45° to 48° C. They should be practiced with an aseptic liquid and in great abundance (from 3 to 6 litres). After the application of this procedure the author always found the uterus retracted, the placenta detached and expelled. He gives a caution as to the use of the ergot of rye in these cases. Dr. Pinard then studies the retention of the placenta either by the total retraction of the uterus, the maximum of which is at the internal orifice of the cervix, or by the partial retraction of the organ, which then determines the imprisonment of all or a portion of the placenta. This imprisonment may be diagnosed by the hand applied to the abdominal parietes. When the retraction is total the uterus may be felt with its normal form, and when it is incomplete the organ will appear hard, ligneous, but of an irregular form. Authors are divided as to what should be done in such a case. Dr. Pinard is in favor of direct intervention.

In a note in the *Petit Journal de la Santé* on the cataract of glass-makers, the author remarks that a German physician found that of 442 glass-makers aged less than 40, there were 42; that is to say, 9.5 per cent., affected with the commencement of cataract; and of 64 glass-makers aged more than 40 years he found 17, that is, 26.5 per cent., affected with the same malady. This proportion is far above the average. In order to account for the cause of this singular predisposition the author made some researches, and came to the conclusion that the trouble of the crystalline lens is due, on the one hand, to the direct action of the intense heat on the eye, particularly the left eye, which is the most frequently affected; on the other hand, the enormous loss of water caused by

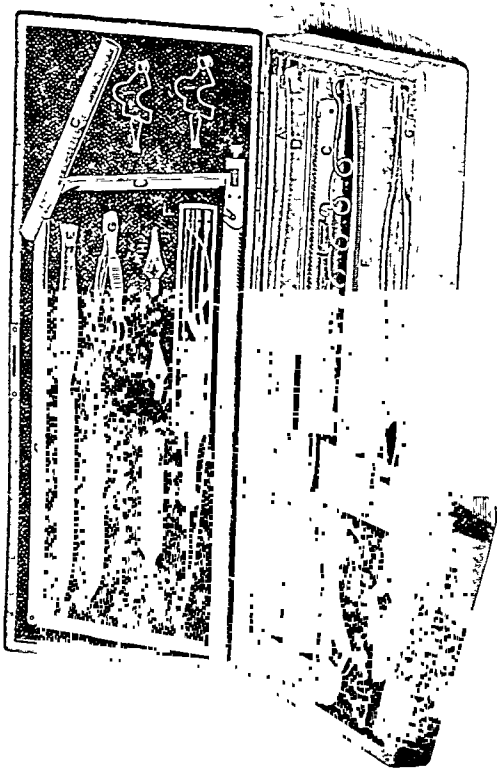
the excessive perspiration under the influence of the heat. It is by this excessive loss of water that may be explained the production of cataract in diabetic subjects.

A. B.

DOMESTIC CORRESPONDENCE.

Surgical Instruments and Case.

Dear Sir:—In surgery, the spirit of the times is simplicity with efficiency. Economy in means as well as time the busy practitioner desires, when efficiency is not destroyed by this economy. Instruments to be used by the general practitioner must be neat, practical, easy to comprehend, and constructed with a special consideration for asep-



Above cut represents instruments nested in case, and same instruments lettered adjusted on cover. Case is 7 x 3 x 1 inches, full in morocco, velvet lined.

sis, the surgeon's bane. These conditions must be observed, and these attributes must be obtained, if the work of the surgeon is crowned with success.

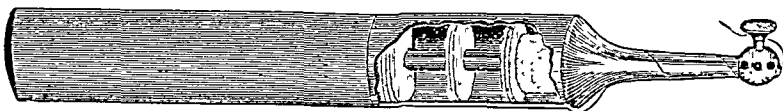
I wish to call the attention of the profession to a little amputating case, so complete in all its appointments and so efficient in the work of minor surgery as to make its possession very desirable. This is a compact case, (made by J. LaF. King, of this city), 7 x 3 x 1 inches, can be carried in the pocket, and yet it contains 2 amputating knives, 1 Liston blade 7½ inches long, with adjustable handles, 1 short knife for circular operations, 1 Hamilton bulldog forceps, 4 artery clamps, 2 serrasins, 1 folding saw frame and handle, adjustable to any angle, 2 6½ inch saw blades, which can be arranged in handles either for amputation or resection, 1 suture carrier and needle holder, which is the crowning feature of the case. This needle carrier is arranged for wire, gut or silk. A number of sutures can be made with it, some new stitches peculiar to the device not heretofore made, the inventor introduces with the needle. It makes the continuous suture, lock stitch with parallel thread on both sides of wound, a chain stitch, parallel thread on both sides, over and over stitch, ball and glove stitch; but the most important is the interrupted self-limiting suture, a most perfect knot that does not slip, holding the first tie just where you place it, tight or loose, until final knot is made. The carrier is 4½ inches long, with hollow handle for needles and wire, and chambers for three bobbins, carrying about forty yards of silk. The needles have various curves, prick point, cutting edges, and adjustable by screws to any angle, and the whole case is constructed with special aseptic features.

Its compactness, its wide scope of usefulness, its novelty and efficiency, are worthy the surgeon's attention, while the genius displayed in the device of saw handle and needle carrier makes it useful for so many purposes, and the moderate price asked for it by the inventor makes it desirable to possess it.

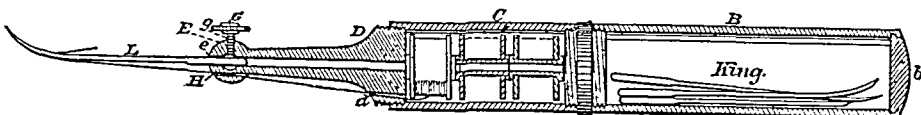
The manufacturer has kindly furnished me cuts of the case and needle carrier that better illustrate the instruments than a mere wordy description.

B. M. GRIFFITH, M.D.

Springfield, Ill., Sept, 10, 1888.



Carrier, Bobbins exposed. Holes in head show directions needles can be used.



Dr. Robert H. H. Library

"The Ethics of Marriage."

Dear Sir:—Dr. Ingersoll, in *THE JOURNAL* of Sept. 22, referring to your editorial on "The Ethics of Marriage" (See *JOURNAL*, Sept. 1, 1888), corrects the statement that "New Mexico, New Jersey, South Carolina, Texas, and the District of Columbia, have no laws relating to the punishment of attempts to perform abortion," so far as the same applies to New Jersey. Now, sir, to prove to you that Texas is not entirely oblivious to matters of protection of the health of her inhabitants, and is not lagging in the race of her sister States in regard to the "stringency of her laws," the records of our State courts show that the violator gets a taste of Texas justice.

In confirmation of the above, I beg leave to refer you to the following Articles of the Criminal Laws of Texas, viz.:

Art. 536.—"If any person shall administer to a pregnant woman, with her consent, any drug or medicine, or shall use toward her any violence, or any means whatever, externally or internally applied, and shall thereby procure an abortion, he shall be punished by confinement in the penitentiary not less than two, nor more than five years; if it be done without her consent the punishment shall be doubled."

Art. 537.—"Any person who furnishes the means for procuring an abortion, knowing the purpose intended, is guilty as an accomplice."

Art. 538.—"If the means used fail to procure an abortion, the offender is nevertheless guilty of an attempt to procure an abortion, provided it be shown that such means were calculated to produce that result, and shall be punished by fine not less than one hundred, nor more than one thousand dollars."

Art. 539.—"If the death of the mother be occasioned by an abortion so produced, or by an attempt to effect the same, it is murder."

Thus, Mr. Editor, you will see that Texas, also, does not "wink" at that "too frequent crime." In justice to the name of our great State, you will please give the above a place in *THE JOURNAL*.

W. W. REEVES, M.D.

Wills Point, Texas, Sept. 28, 1888.

Dr. Ord and the "Family Doctor."

Dear Sir:—In common professional courtesy I cannot allow the remarks of your occasional correspondent (London Letter, *JOURNAL*, Sept. 22) on Dr. Ord to pass without comment. Dr. Ord is a man whose work and worth are universally recognized, and a life-long devotion to the highest interests of the profession should, in reputable journals at least, protect him from baseless attacks.

The article in question, in the "Family Doctor," bears internal evidence of composition by some

one who had obtained such general and specific information as is readily available about prominent physicians, but the ignorance of the writer and the lack of intimate personal knowledge are shown by the fact that Dr. Ord's address is given at a house from which he had moved several years ago!

During his stay in this country last year Dr. Ord was ill, and had indeed reasons of an acutely personal nature for not attending the meetings of the Medical Section of the Congress.

Yours very truly,

WM. OSLER, M.D.

1502 Walnut St., Phila., Sept. 29, 1888.

BOOK REVIEWS.

THE BEST SURGICAL DRESSING. How to prepare it and how to use it. With a consideration of BEACH'S PRINCIPLE OF BULLET-WOUND TREATMENT. By OTIS K. NEWELL, M.D., etc. Sm. 8vo, pp. 170. Boston: Cupples and Hurd. Chicago: W. T. Keener.

After a short introduction in regard to the use of iodoform in surgery, Dr. Newell gives a translation of Miculicz's paper on the "Use of Iodoform in Surgery," which appeared in the *Wiener Klinik* in 1882. Most American readers are probably familiar with the general conclusions of Miculicz, though this is the first time, we believe, that the paper has appeared in full in English. In the six years since Miculicz wrote his paper, iodoform has found its legitimate place in surgery, and there are few that will now deny its value.

The second part of the book deals with Beach's principle of bullet-wound treatment. Surgeons are pretty well agreed as to the proper treatment of bullet-wounds of the chest and abdomen. But in other cases, says Dr. Newell, they seem, as a rule, to disregard the following principle of bullet-wound treatment: "Never disturb a bullet-wound unless there are positive indications of the necessity of so doing." Or in the words of Roswell Park: "The injury which a bullet may inflict is done by it as it passes in its courses; any subsequent harm usually comes from unwarranted interference." The ball, on account of the heat generated by its passage out of the weapon and through the air, may easily enter the body in an aseptic condition, and when thus imbedded in the tissues may be an innocuous and inoffensive substance. In a general way it may be said that probing for a bullet under these conditions, or at all when one is not prepared to operate, is not good surgery. This expresses, in a general way, what Dr. Newell calls Dr. Beach's principle of bullet-wound treat-

ment. A number of illustrative cases are given to show the practical working of the principle in practice.

MISCELLANEOUS.

NEW EDITION.—J. B. Lippincott Company, Philadelphia, announces that a new edition of the *United States Dispensatory* is now being bound, and will be ready in a few days. The revision has been thorough, and not merely the addition of a supplement. More than one third of the book, or nearly eight hundred pages, is entirely new matter, while the whole work has been most carefully rewritten. The National Formulary has been incorporated.

CLINICO-PATHOLOGICAL SOCIETY, OF WASHINGTON, D. C.—The officers of the Clinico-Pathological Society of Washington, D. C., which was organized in the early part of last winter, are as follows:

President, G. W. Johnston, M.D.
1st Vice-President, H. L. E. Johnson, M.D.
2d Vice-President, H. B. Deale, M.D.
Treasurer, C. W. Richardson, M.D.
Secretary, D. K. Shute, M.D.

A SANITARY CONVENTION will be held at Hastings, Mich., under the auspices of the State Board of Health, on Monday and Tuesday, December 3 and 4, 1888.

There will be sessions the first day at 2:30 P.M. and 7:30 P.M.; on the second day at 10 A.M., 2 P.M., and 7:30 P.M. Standard time. At each session of the Convention there will be addresses or papers on subjects of general interest pertaining to public health, each paper to be followed by a discussion of the subject treated.

Officers of the Convention.—President, Hon. D. R. Cook.

Vice Presidents.—Hon. Clement Smith, Hastings; William H. Young, M.D., Nashville; S. C. Rich, M.D., Middleville; Eugene Davenport, Woodland; Norman Latham, Baltimore; H. F. Peckham, M.D., Freeport; A. C. Towne, Milo; Prof. J. W. Roberts, Hastings.

Secretary, A. E. Kenaston, Hastings.

The admission to all sessions of this Convention will be free, and the ladies are cordially and especially invited. The invitation is especially extended to health officers to be present and take part in the discussions.

The objects of the Convention are the presentation of fact, the comparison of views, and the discussion of methods relating to the prevention of sickness and deaths, and the improvement of the conditions of living. This is not a doctor's Convention, but it is for the people generally.

Addresses and Subjects to be Presented and Discussed.

—Brief statement of objects of Convention, by Hon. John Avery, President of State Board of Health.

Address by the President of the Convention, Hon. D. R. Cook.

Among the subjects which it is expected will be presented and discussed are the following:

1. The Water-supply of Hastings.
2. Plats of Localities in Hastings.
3. Disposal of Excreta and Waste in Hastings.
4. Ventilation and Heating.
5. Prevention of Communicable Diseases.
6. The Germ Army—how it may be Routed.
7. Duties of the Local Health Officer.
8. School Hygiene.
9. Prevention of Insanity.
10. Prevention of the Diseases of the Eye and Ear.
11. Food and its Adulterations.

12. Degenerations of Age.

13. An Address by Prof. Vaughan, of the University. Authors of papers are requested to limit them to twenty minutes. The speakers who lead the discussions are to be allowed ten minutes each, all others five minutes.

The papers are expected to be original contributions, which, when read, are to be considered the property of the Convention, and to be left with the Secretary. Programmes will be issued before the Convention.

Committee from the State Board of Health.—Henry B. Baker, M.D., Lansing.

Local Committee.—Hon. Daniel Striker, Chairman; Hon. Jas. L. Wilkins, Mayor of the City; Dr. D. E. Fuller, City physician; W. L. Wilkins; Dr. A. P. Drake; C. W. Warner, City recorder, Sec. of Committee.

Committee on Finance.—John Bessmer, Dr. Wm. H. Snyder, M. L. Cook.

For further information address A. E. Kenaston, Sec'y., Hastings, Mich.

THE AIR OF COAL MINES.—MR. T. G. NASMYTH, in a report to the Scientific Grants Committee on "The Air of Coal Mines," draws the following conclusions:

From comparison of the state of air in coal mines with that in one-room houses, schools naturally ventilated, and manufactories, it will be admitted that it is wonderfully good. The problem of mine ventilation is a difficult one, but by the use of fans it has been solved to a certain and large extent. It would not be easy, if possible, to ensure that the air of mines would be as pure as the air above ground, as so many causes are coöperating to vitiate mine air—respiration and excretions of men and horses; combustion of powder, oil, and tallow; the exudation of gases peculiar to the various minerals met with in mines; and the decomposition of wood. To keep the products of all these in moderation a large and ever-moving volume of air must pass in and out of the mine. The sectional area of the air shaft would have to be much larger than present uses demand if the impurities were to be reduced to the quantity found in pure air, but the present system might, in my mind, be much improved by attention to some points which have struck me in the present inquiry, and which I now venture to suggest to those concerned.

The miner spends about one-third of each day in the mine, and we may assume that about one-third of his excreta pass into the mine, and there remain as a source of pollution for an indefinite time. Horses are at all times in the mine, and their excreta are constantly polluting the air, and this cannot even partially be avoided. The evil produced by the former might be diminished by the use of some form of earth closet, small coal or coal dust taking the place of earth. The receptacles could be removed daily or weekly, according to circumstances. This proposal may not strike a coal owner or manager as being practicable, but it is very simple and to a certain extent it would diminish the difficulties and the cost of ventilation. As regards pollution by horses, it is not convenient always to have stables in the upcast shaft, but for the sake of the air they should be; for the sake of the horses the stables are better in the downcast, as where the stables are in the upcast pit experience proves that they do not live so long as in the downcast. Wherever the stables are, means should be taken to purify them; impermeable floors which can be washed out with water, lime-washed walls, and careful attention to daily cleaning out of litter, would all help the problem of ventilation.

Natural means should assist artificial; thus, if the mouth of the upcast shaft were bell-shaped, and by a weather-cock arrangement made so as not to face the wind, its aspirating action would assist the fan instead of rather opposing it, as it does with the present system; and in the case of the downcast a sail or brattice might be so arranged as to promote the down current. Further,

in the case of the downcast, all sources of vitiation should be removed from near its mouth, such as tar, oil, paraffin, etc., and there should be no chance of currents passing from the furnace holes down the shaft.

The Work of the Miner and its Effects.—Twenty years ago air was very bad in mines; ventilation was almost unknown, and the hours were very long. Nowadays the air is generally good; ventilation is efficiently carried on, and hours of work are short. The miner works hard whilst at his work, but he has short hours and many holidays. In the tables of statistics I have shown that phthisis, contrary to general opinion, is not a common disease amongst miners; and my own everyday experience for ten years in a large mining population supports those tables. In fact, I know of no disease peculiar to miners, or any disease in excess existing among miners. I have also consulted many other medical men practicing amongst colliers, and their opinion coincides with my own. In conclusion, I have to state, as my belief, that the conditions connected with miners' occupation are as favorable to health as those in the occupation of any other workmen, and this opinion is borne out by the vital statistics quoted.—*Brit. Med. Journ.*, Aug. 4, 1888.

LIKE AN ALARM OF FIRE.—The head of the Health Department of New York City has some very clear notions in regard to the great need for alertness in the management of infectious diseases. He has had occasion lately to write officially as to the imminence of yellow fever. From his letter we quote a paragraph which shows its author's confidence that this department is thoroughly equipped and disciplined. After remarking that yellow fever is not to be dreaded this year at our northern cities, he says, "If the fever should occur, however, it would be in isolated cases, with which we are prepared to deal so promptly and effectually that it will have no chance to spread. The machinery of the contagious diseases division of this department is in such condition that it can be set in motion at a moment's notice, and I am confident that the response of this department to a notice of known or suspected disease of a dangerous character would be like that of the fire department to an alarm. With special reference to yellow fever, we have a medical inspector constantly on duty at our headquarters. Within five minutes after receiving a report he would be on his way to inspect it, within thirty minutes we should have his report, and immediately an ambulance and the disinfectors' wagon would be despatched to the place. In an hour we should have the patient on his way to the hospital at North Brother Island."

When we reflect how much panic and harm often arise from a lack of preparation for such visitations, it is very gratifying and reassuring to read that a health official compares the readiness and discipline of his department with those of the model fire departments of our large cities, where everything is in motion at the touch of a bell.—*Medical News*, Sept. 1, 1888.

MEDICAL SOCIETIES IN KANSAS.—The *Kansas City Medical Record* in a recent editorial under the above caption says: A formidably harmonious county medical society, well attended and doing good work, will demoralize any incompetent opposition. The Kansas profession, we are pleased to note, are beginning to understand the situation, and societies are being formed in many parts of the State; good work is already inaugurated in these new societies, and with a united effort the State will be handsomely redeemed.

THE TRI-STATE MEDICAL ASSOCIATION of Mississippi, Arkansas, and Tennessee will meet in Memphis, November 13—the second Tuesday in the month.

CHOLERA has very nearly ceased in Cashmere, India, but it prevails still in many parts of the country, though not to any great extent.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from September 22, 1888, to September 28, 1888.

By direction of the President Major George M. Sternberg, Surgeon U. S. Army, will proceed to Decatur, Ala., and to such other points in the infected districts of the Southern States as he may deem necessary, to continue his scientific investigations of yellow fever. Par. 8, S. O. 224, A. G. O., Washington, September 26, 1888.

Under authority from Hdqrs. of the Army, A. G. O., dated September 22, 1888, Major Charles B. Throckmorton, and batteries "K and M," Second Artillery, comprising the garrison of Jackson Bks., New Orleans, La., will proceed at once, by sea, to New York Harbor, and upon arrival there will take post at Ft. Wadsworth, New York Harbor. A small guard of enlisted men will be left at Jackson Bks. Major John W. Williams, Surgeon, will accompany the troops to New York Harbor; Major Harvey E. Brown, Surgeon, will remain at Jackson Bks. Par. 12, S. O. 202, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, September 26, 1888.

Major Robert H. White, Surgeon U. S. Army, is granted leave of absence for one month, with permission to apply for an extension of one month. Par. 7, S. O. 199, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, September 22, 1888.

By direction of the acting Secretary of War, leave of absence for six months on surgeon's certificate of disability, with permission to leave the Div. of the Missouri, is granted to Capt. Ezra Woodruff, Asst. Surgeon. Par. 5, S. O. 223, A. G. O., Sept. 25, 1888.

By direction of the acting Secretary of War, Capt. Washington Matthews, Asst. Surgeon, is detailed as a member of the Army Medical Examining Board appointed to meet in New York City October 1, 1888, by S. O. 203, September 1, 1888, from this office, vice Major George M. Sternberg, Surgeon, hereby relieved from his detail as a member of the Board. Par. 3, S. O. 224, A. G. O., Washington, September 26, 1888.

Upon the recommendation of Capt. Daniel Weisel, Asst. Surgeon, senior medical officer camp of instruction of the Fifth Cavalry, Capt. J. Van R. Hoff, Asst. Surgeon, is assigned in charge of active operations of the hospital corps in that camp. Par. 2, S. O. 121, Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., September 22, 1888.

By direction of the acting Secretary of War, leave of absence, to include May 3, 1889, is granted Capt. George F. Wilson, Asst. Surgeon. Par. 14, S. O. 223, A. G. O., September 25, 1888.

The resignation of Capt. George F. Wilson, Asst. Surgeon, has been accepted by the President, to take effect May 31, 1889. Par. 15, S. O. 223, A. G. O., September 25, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending September 29, 1888.

Medical Inspector Adrian Hudson, ordered for examination preliminary to promotion to Medical Director.

Medical Inspector Newton L. Bates, ordered for examination preliminary to promotion to Medical Director.

Surgeon George H. Cooke, ordered for examination preliminary to promotion as Medical Inspector.

Medical Inspector Michael Bradley, ordered as member of Naval Examining Board.

Medical Inspector Henry M. Wells, relieved from duty as member of Naval Examining Board.

Surgeon Manly H. Simons, ordered to Widow's Island Naval Hospital.

P. A. Surgeon A. C. Heffenger, detached from naval hospital, Widow's Island, and wait orders.

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ORIGINAL ARTICLES.

SOME OBSERVATIONS CONCERNING THE EXTRACTION OF CATARACT WITH- OUT AN IRIDECTOMY, AND THE USE OF THE BANDAGE IN THE AFTER-TREATMENT.

Read in the Section on Ophthalmology at the Thirty-ninth Annual Meeting of the American Medical Association, May 9, 1888.

BY GEO. E. FROTHINGHAM, M.D.,

PROFESSOR OF OPHTHALMOLOGY IN THE UNIVERSITY OF MICHIGAN.

The question as to which is the best method of extracting senile cataract has lately been considerably discussed, and a return to the old flap operation, in all its essential features, has been advocated and carried into practice by several ophthalmic surgeons. Professor Schweigger has even abandoned the use of the narrow knife, and has substituted one very nearly of the same form as the one first used by Joseph Barth, the founder of the Vienna School of Ophthalmology, and adopted by Beer and commonly known as Beer's knife. In this respect Schweigger has returned to the practice of the great founder of modern ophthalmology, instituted over a hundred years ago. By this movement the cycle has been completed and we find ourselves at the point of departure. Movement does not always mean advance, however, and I believe that not only this return to the wide knife, but also the attempt to extract any cataract, hard or pasty, without an iridectomy, is a backward movement that a proper consideration of past experience should deter us from making.

To me the matter has been one of considerable interest, for, so far as I know, I was the first to devise the upward extraction without an iridectomy and using a narrow knife, as has lately been advocated by several operators. I published an account of this operation fourteen years ago, and claimed for it advantages that a more extensive experience proved to be unfounded. I soon abandoned it, I confess, not a little chagrined at having claimed such advantages for it, without a more prolonged trial and analysis of results.

When I first began to operate for cataract, about twenty years ago, von Graefe's extraction, devised but a few years before, had been almost universally

adopted both in Europe and this country. I knew of but one operator of note who still adhered to the flap extraction. I began to operate by making the flap extraction, but I soon abandoned the use of the wide knife, making the flap with a Graefe's knife and performing an iridectomy only when the iris offered unusual obstruction, or was injured in some way. I was induced to adopt this older method by a consideration of the danger that seemed to me inherent to the extreme peripheral incision advocated by von Graefe, and practiced by him and his followers everywhere at that time. This incision approached so near to the ciliary body that it seemed to me a dangerous position to inflict a wound; and, indeed, a few cases of cyclitis, ultimately involving the other eye, and seemingly due to the peripheral position of the incision, had already been reported. Besides this, the excision of the iris seemed like an unnecessary mutilation, and served to add to the traumatism from which the eye must suffer in the extraction. It seemed to me unwarrantable to incur these dangers, unless the operation could be shown to possess elements of safety that more than made up for these obvious disadvantages. Statistics had not then accumulated, as they have since, to substantiate the claims of Graefe's operation. But notwithstanding this, it was rapidly adopted through the magic influence of his justly celebrated name.

Probably the ease with which his incision is made, and the facility with which the lens can be extracted by his method, were not the least of the inducements that led to its rapid substitution for the more difficult flap extraction. It must be borne in mind that in the old flap extraction the incision was made with a wide triangular knife, known as Beer's knife. It required the greatest care and skill to complete this incision without allowing an escape of the aqueous fluid, and entanglement of the knife in the iris and various other complications that I need not mention now. Indeed, so much practice and skill was necessary to complete the incision in a suitable manner that surgeons generally hesitated to perform it, and quite generally operated for cataract by couching or displacement, long after that operation had been condemned by specialists as decided malpractice. One has only to read the statements found

at this period in any standard work on surgery, to see how formidable the operation seemed to them.¹ I remember now the many hours I spent in executing it upon the cadaver, and upon animals, before I attempted to make it upon a patient.

The flap when properly made, however, by reason of its large size, and lying in the cornea, just anterior to the sclero-corneal junction, allowed of a rotation of the lens upon its axis and passage through the pupil into the anterior chamber, from which it could generally be extracted without mutilating the iris. When a cure was effected, without accidental complication, there existed a central, movable pupil, and to the ordinary observer the eye seemed perfectly natural. Even on close inspection it revealed the absence of the lens only by the deep anterior chamber and tremulous condition of the iris. Indeed, its successful results were models of perfection. It was the ideal operation. Why was it abandoned? Besides the large number of cases lost by suppuration of the cornea, prolapse of the iris, and occlusion of the pupil, there were several reasons which were more or less important, that I shall not mention in detail here. The result from all these causes was that, even with the greatest operative skill that could be acquired, and the closest attention to after-treatment that could be bestowed, failure occurred so often that thoughtful operators sought for some method by which the dangers and failures might be lessened. The perfect results by this method were all that could be hoped for, and if "perfect results for the few" had been von Graefe's motto, he would never have proposed as a substitute the operation that bears his name. But, regarding "sufficient sight for the greatest number" as the prime object to be sought, he made the change, and soon reduced the number of failures to about one-third what they had formerly been, and complete successes he raised from 80 per cent. to 90 per cent.

Influenced by the considerations I mentioned at the beginning, I adhered to the flap operation until statistics, sufficiently extensive, should demonstrate the superiority of Graefe's extraction. Before this seemed to me established, Liebreich published his method of downward extraction, which he claimed to be as easy of execution as couching, as safe as Graefe's method, and as perfect in result as the flap extraction.

His operation was performed downward, the incision being made with a narrow Graefe's knife, the puncture and counter-puncture being about 1 millimetre external to the clear margin of the cornea, and a little below the horizontal meridian. From these points it was carried downward in a curved direction and terminated at a point about 2 millimetres above the lower margin of the cornea. Influenced by the claims thus made by so

distinguished an author, I tried it in several cases soon after his publication appeared. I was greatly disappointed, however, by finding, at the start, that the operation, contrary to his claim, was difficult in execution, for, by reason of the anterior position of the apex of the flap, I found it even more difficult to evacuate the lens without resorting to traction than in the flap operation, in which the incision was made more peripheral, and allowed of more ready escape of the lens under the influence of gentle pressure. Besides, Liebreich's method had the fault of downward extractions generally, and in case iridectomy became necessary the coloboma would be uncovered by the lid.²

From a consideration of this and other operations I devised an upward extraction somewhat similar to Liebreich's, but having the apex nearer to the sclero-corneal junction, only one millimetre or less inside of it, the puncture and counter-puncture being at about the same distance behind the margin of the clear portion of the cornea as in his operation. After making this operation a few times, I published a description of it in the Transactions of the Michigan State Medical Society for 1874, (page 237 *et. seq.*), and claimed for it superiority over other methods then practiced. From that report I quote the following: "The operation as I have performed it is made thus: the patient, having been chloroformed, a stop speculum is introduced and the eye fixed as in modified linear extractions. With a Graefe's knife the puncture is then made in the sclera, about a half a line from the margin of the cornea, and about a line, or a line and a quarter, below a tangent to the upper edge of the cornea; the counter-puncture is made in a corresponding position on the opposite side, and a flap is then carved out so that its upper edge shall be about half a line within the corneal margin. The capsule is then lacerated, and the other steps of the operation are the same as in flap extraction.

"The advantages of this method are:

"First, ease of execution:

"Second, as great safety from corneal suppuration as in the modified linear extraction.

"Third, as perfect results as by the flap extraction.

"Fourth, in case any accident requires an iridectomy, the coloboma will be covered by the upper lid, and thus the least inconvenience result."³

But I soon found it necessary to modify this operation very materially. I carried the apex of the incision farther backward, close, to the sclero-corneal junction, or even a little within, but still farther forward than Graefe originally recommended. I then made an iridectomy in all cases.

¹ See Gross' System of Surgery, fifth edition, vol. ii. p. 329; also W. Lawrence, Treatise on Diseases of the Eye, p. 430, edition of 1833.

² He suggested that it could be made upward, but it does not appear that he ever attempted it.

³ Transactions of Mich. State Med. Soc. 1874, p. 240.

I was driven to these changes by the accidents and difficulties inherent to any extraction in which the incision is not as peripheral as consistent with safety to the ciliary body, and these will require an iridectomy for the easy and safe evacuation of the lens, and greatest freedom from complications during the after-treatment. Unless the incision is, at the apex, well forward, and the flap large, there will be very great difficulty in rotating the lens forward so that it will pass through the pupil into the anterior chamber before it engages in the wound. If it does not do so, the iris is pressed before it as it engages in the opening, and, overlapping it, holds it as a hood and prevents its evacuation without dangerous pressure, and then only by stretching and bruising the iris in a manner that would greatly endanger inflammatory reaction. Any attempt to draw the iris backward over the edge of the lens, and replace it within the globe behind it, would hardly diminish the injury to the iris itself, and would be very liable to lead to rupture of the zonula of Zinn and escape of vitreous. Indeed, it has been said that Graefe was led to perform iridectomy, not merely to facilitate the escape of the lens, but because he had noticed that the most severe and destructive forms of iritis that occurred after extraction by the old method, had their starting point from this bruised and stretched portion of the iris. Infection would certainly be more likely to follow the replacement of the iris after such an exposure to conjunctival secretions, and this would be best avoided by excision.

An analysis of the next sixty cases operated upon by me, by this method, after publishing the description and making the claims above quoted, showed that iridectomy had to be performed in eight cases to avoid excessive bruising and stretching of the iris, or such prolonged and excessive pressure to evacuate the lens as greatly to endanger prolapse of vitreous humor. Even then prolapse of vitreous occurred seven times (equal to $11\frac{2}{3}$ per cent.).⁴ There were three cases of suppurative iritis resulting in reopening of the wound, suppuration of the cornea and loss of the eye, and one case of suppuration of the cornea beginning in the wound, and also resulting in loss of the eye. Prolapse of the iris occurred eight times complicating the recovery, though none led to immediate loss of the eye. There were fifty-one good results (85 per cent.), five partial successes ($8\frac{1}{3}$ per cent.), and four total failures ($6\frac{2}{3}$ per cent.) Cases in which the vision was $\frac{1}{16}$ or above, were counted as good results.

To be brief, I found the operation without iridectomy, tedious, and more likely to be at-

tended with prolapse of the vitreous than when iridectomy was made, and this I believe will be the experience of other operators. In twenty-four cases of uncomplicated hard cataract, operated upon by this method and reported by Dr. Chas. S. Bull, prolapse of the vitreous occurred three times, and the lens had to be removed by a traction instrument.⁵ This indicates something wrong with the operation itself, for prolapse of the vitreous need occur but seldom in extraction with iridectomy. It does not occur, on an average, in more than 3 per cent. of my cases now. Again, lens matter was more often left in the eye, not only behind the iris, but scraped off by the protruding sharp upper lip of the wound, it became packed into Fontana's space, from which position it was very difficult, and sometimes impracticable to dislodge it. Iritis and occlusion of the pupil occurred with greater frequency than it has since in my practice, and the dense plug, formed by the remains of lens matter and iritic effusion, constituted some of the most difficult cases to relieve by secondary operation. Schweigger confesses that more than 50 per cent. of all his cases heal with posterior synechia. (*Archives of Ophthalmol.*, December, 1887, p. 453.) One frequent source of danger and annoyance, namely prolapse of the iris, seemed to me almost certainly avoidable by the performance of an iridectomy. This occurred in one of my cases five days, and, in another, four days after the operation, and to patients who had kept reasonably quiet.

In the cases already reported, I notice a repetition of my experience. In forty-eight cases collected in Boston, by Dr. Derby, in which this operation has recently been made by skilled operators, prolapse occurred in twelve cases, or one in four. In one of these it occurred without cause in a docile patient four days after operation.⁶ Schweigger in his report of his first ten cases operated upon by this method, cites one case of prolapse of the iris in the whole length of the wound. This equals 10 per cent. He expresses the hope that this per cent. may be lessened in future cases. (See *Archives of Ophthalmology*, December, 1887, p. 451 and 452.)

This danger I believe cannot be wholly, or even largely, guarded against by the use of myotics. A year ago I was performing an extraction under cocaine upon a female patient who seemed to have the usual fortitude until the operation had been begun and the incision made. She then became unmanageable, and so strained the ocular muscles that vitreous began to escape quite freely before I had begun the iridectomy. I immediately introduced a sharp hook, and with its back pushed the iris backward over the equator of the lens and burying its sharp point in the nucleus below the

⁴ This experience is not exceptional as may be inferred from the report of two operations by Schweigger, in both of which an iridectomy became necessary, and in one vitreous escaped, and in the other the soft lens matter had to be removed with the scoop. See *Archives of Ophthalmology*, December, 1887, pp. 452 and 453.

⁵ Transactions American Ophthal. Soc., 1887. Cases 1, 11, 13, of table following page 418.

⁶ Boston Medical and Surgical Journ., Feb. 23, 1888, p. 189.

centre, drew the lens, together with its capsule, from the eye. The iris did not then prolapse, but resumed its normal position, the pupil contracting as usual when the aqueous chamber has been emptied. Performing the toilet of the wound, I instilled a solution of sulphate of eserine (2 grains to the ounce), and applied the bandage. Eserine was instilled regularly and all seemed to be going on well when, on the fourth day, without undue exertion on the part of the patient, a sudden pain occurred in the eye, and on examination the wound was found to have reopened and the iris was prolapsing. This case recovered only after a prolonged convalescence, and several operations, and then with a pupil drawn upward toward the wound. The effect of mydriatics, I believe, is too transient to maintain contraction of the pupil without too frequent instillations, and injurious meddling with a eye after operation for cataract. Besides, it is not rational to expect them to contract the pupil powerfully enough to resist the outward gush of aqueous humor which tends to carry the iris through the wound when it is suddenly broken open by the intraocular pressure.

I need not dwell upon the gravity of this annoying and dangerous accident. It is in most cases only remedied by resorting to a severe operation before the eye has recovered from the traumatism of the extraction, and recovery is generally tardy and often incomplete. Prolonged irritation may ensue, and cyclitis follow, with ultimate destruction not only of the eye operated upon, but the other through sympathy. My experience with this troublesome complication led me to bring the apex of my incision just at the sclero-corneal junction, and thus avoid so large a flap, and also to make an iridectomy in all cases, as a preliminary step to evacuation of the lens. At first I sought to remove as little of the iris as possible, thinking this would allow of easy evacuation of the lens during operation and also of an unobstructed escape of aqueous in case of a sudden reopening of the wound, and thus avoid the extensive prolapse of the iris that would result when it is left entire. In such a case the iris forms a sac, holding the aqueous and acting as a dilator to separate the lips of the wound, often to the utmost extent. I found, however, that when the iridectomy was small the iris still offered some obstruction to the escape of the lens, necessitating a larger flap than would otherwise be needed, and also that an occasional prolapse of the iris at the angles of the wound would occur during the after-treatment. Though these were not so dangerous as the extensive prolapses that often occurred when no iridectomy was made, they still constituted a not very infrequent and quite troublesome complication. These accidents led me to enlarge my iridectomy and I now always aim to remove a large section of the iris. While but a small portion of the pupillary border is cut away,

I seek to remove a large portion of the periphery, in fact, nearly all of that portion that lies behind the incision. The iridectomy thus made is as large as we would attempt for the relief of glaucoma.

I am aware that many operators severely criticize such an iridectomy, and I think of but one distinguished ophthalmologist who professes to practice it.⁷

I have found this large iridectomy not only a safeguard against prolapse, but also against those glaucomatous attacks so painful and dangerous at times during a late attack of iritis following extraction without an iridectomy, or when only a small iridectomy has been made. A large iridectomy also allows of a safer extraction, and a more complete evacuation of soft lens matter, and that, too, with a smaller flap than would otherwise be required. The danger of suppuration of the cornea is thus greatly lessened. The coloboma, in an upward extraction, is so largely covered by the upper lid as to give rise to very little visual disturbance.

In the after-treatment of cataract extractions I deem the application of a bandage covering both eyes, a very important measure. Properly applied, it helps to ensure the healing of the wound, and lessens the dangers of internal inflammations also.

The bandage should be applied in such a way as to exercise gentle pressure upon the orbital portion of the orbicularis muscle. By means of absorbing cotton, properly packed into the depressions about the globe, it serves also to exercise some pressure about it in such a way as to maintain the convexity of the cornea, and more complete coaptation of the flap. This, by some, may be thought a fanciful measure, but it is rational practice, in my opinion. Slight pressure, not uncomfortable in degree, often serves to prevent that troublesome attempt to wink that is annoying to some patients, and which may prove injurious just after an operation. The unoperated eye should be closed and covered with a compress and bandage, as well as the eye operated upon. This, I believe, is of great importance, for, if the unoperated eye is left open, the necessity to wink will exist, and every time the lids of this eye close, there will be a similar, sudden, spasmodic contraction of the orbicularis of the operated eye. This will compress the globe, and must cause a slight motion of the lips of the incision, unfavorable to speedy union. In the case of a fractured bone, such a motion would be regarded as very dangerous to the proper healing process, and bony union might be wholly prevented. It can have only an evil influence upon the healing of the wound after a cataract extraction.

⁷ E. Landolt. See discussion at Ninth International Med. Congress in the American Journal of Ophthalmology, Sept. 1897, p. 261.

If any one will place two or three fingers lightly upon the closed lids of one eye, while the other is left open and winking, they can readily demonstrate the strong contractions of the lid of the closed eye, which take place every time the winking occurs in the eye that is left open. These contractions are strong, and must give rise to a sudden and decided compression of the globe, that cannot occur without producing some motion of the lips of the wound.

Again, if the unoperated eye be open and used, every motion of the ball will be attended with a corresponding motion of the operated eye. This will be likely to cause gaping of the wound and occasional evacuation of aqueous, and perhaps prolapse of the iris also. Even the exposure of the unaffected eye to light acts as an irritant to the other. This is a matter of physiology well known. It would tend to produce inflammatory reaction when it might not otherwise result. If inflammation has already commenced, it would serve to intensify it. In every case of injury, followed by inflammatory reaction, we find the patient complaining that use of his uninjured eye aggravates the pain, if present, in the one injured. Often such an exposure of the well eye is the only exciting cause of pain in the injured one, there being no pain in it when the other eye is not used or exposed to light. These examples are sufficiently numerous to enable us to establish the principle that *when one eye has been subject to severe traumatism, the other should be shielded from light, and use of it, as much as possible, avoided.* More than this, the bandage and thick cushion of cotton serve to protect the eye from accidental blows that may otherwise do harm, and is much easier to remove than plasters generally are.

The patient should be confined in bed. It is here that he can be kept most quiet and his circulation in the best condition to avoid inflammatory affections of the interior of the globe, that are so frequently a cause of failure after an extraction. If an iritis exists we would certainly require confinement to bed. If we could control our patients suffering from any form of iritis, we would confine them all to bed. Our failure to cure the disease, and the prolonged course which many cases pursue, may be justly attributed to the fact that the patient goes about, and is thus exposed to influences that tend to cause relapses and aggravate the disease in all its stages. Why should we court this danger, always liable after cataract extraction, by allowing a patient to be dressed and to go about almost at pleasure, as some propose to do? It has frequently occurred in my practice, that everything has gone on well until the beginning of the second week, when some slight exposure on the part of the patient who is allowed to be up and dressed, has provoked an obstinate iritis. If I could have my way I would keep all imprudent patients in bed, and

under the care of a discreet nurse, for full two weeks after an extraction.

As a result of experience in making over seven hundred extractions, over two hundred of them being flap operations, I have come to the following conclusions:

First. That a narrow, sharp pointed Graefe's knife is the most convenient instrument with which to make the incision for the extraction of hard, half hard, or pasty cataracts, whether an iridectomy is to be made or not. It is the only knife with which a suitable flap can be made, one with edges in such a form as to remain in proper coaptation under the pressure of the lids.

Second. The incision should not be farther forward than the sclero-corneal junction at the apex, and at the lower angles should be about one and a half millimetres behind it.

Third. A large iridectomy should be made, so as to remove obstruction to the escape of the lens, and avoid the danger of prolapse in the course of recovery.

Fourth. The flap should be as small as possible and yet allow of an evacuation of the lens without undue pressure.

Fifth. Extraction without iridectomy requires a larger flap than would otherwise be necessary, and thus adds to the risk of suppuration of the cornea. It does not allow of so complete evacuation of lens matter. The retained lens matter, together with bruising and stretching of the iris; adds to the danger from iritis following the operation.

Sixth. The dangers of extraction may be greatly lessened by performing a preliminary iridectomy two or three months previous to the removal of the lens.

SECTION OR EXSECTION OF THE RECTUS

IN THE TREATMENT OF PARALYTIC STRABISMUS, AND THAT DUE TO EXTREME OVER-CORRECTION WITH LOSS OF MOTION.

Read in the Section on Ophthalmology at the Thirty-ninth Annual Meeting of the American Medical Association, at Cincinnati, May 7, 1888.

BY ARTHUR E. PRINCE, M.D.,

OF JACKSONVILLE, ILL.

OPHTHALMIC AND AURAL SURGEON TO THE ILLINOIS STATE INSTITUTIONS FOR THE DEAF AND DUMB AND BLIND.

The purpose of this paper is the presentation of a series of cases of *irretrievable* loss of power of either rectus, causing extreme paralytic deviation, the restoration of the equilibrium having been accomplished through *section* or *exsection* of the contracted muscle. Such cases are found in one of the four following classes:

1. Permanent atrophy or paralysis.
2. Irrecoverable loss of either rectus through accidental section of the muscle back of its capsular perforation.

3. Extreme over-correction of long standing, following tenotomy with excessive laceration of the capsule, permitting the retraction of the tendon back of the equatorial meridian, whence, owing to atrophy or adhesions it cannot be successfully advanced.

4. Irrecoverable traumatic dislocation of the rectus.

Cases belonging to the paralytic class are not very infrequent. The class of accidental section of the muscle in place of the tendon (formerly very large before the relations of the capsule were understood) is assuming diminished proportion, and new cases are seldom produced except by the most inexperienced charlatan.

The third class is becoming smaller in proportion to the attention paid to the preliminary correction of ametropia, and the frequency with which advancement is employed in the correction of high degrees of squint.

In the fourth class my knowledge is limited to the observation of case 7.

The clinical aspect of these conditions needs no particular consideration. The unpleasant appearance of an extreme deviation, especially when outward or upward and accompanied by restricted motion, is too familiar to be mistaken. The exceptional reference, if any, to be found in the literature of treatment, and the acknowledged incapability of tenotomies and advancements to correct these deformities, justifies the brief outline of the following cases, which have led to the adoption of the present mode of practice.

Case 1.—One of a series of unsatisfactory results, following attempts to correct a paralytic condition, by advancement.

Mrs. D., aged 45. In childhood both interni had been tenotomized in an unknown manner, resulting in a moderate over-correction, which later in life became a divergence of both eyes, measuring together 70° . The interni were so inefficient that the axis of neither eye could be brought parallel to the meridian plane. Lateral motion was restricted to 30° in the right, and 25° in the left eye. The operation performed was a tenotomy of the externi with advancement of the retracted internal recti. The interni were found remotely attached to the posterior hemisphere of the ball, but the advancement was accomplished in a satisfactory manner, and the result was a temporary success. Soon after her discharge a slight divergence (10°) was observed, but in contrast with the gravity of the former condition was not regarded as a bad failure. For three months the divergence increased until it would have been difficult without actual measurement to determine any material improvement.

This failure is introduced as a type of the results which will attend the attempts to restore the equilibrium through advancing a muscle which has remained for many years retracted in the orbit,

becoming atrophic through inactivity. The superior strength of the opposing muscle, though tenotomized, will assert its supremacy and the correction will not be permanent.

Case 2.—*Section of both recti, posterior to their capsular perforation.*¹—Barney Burnes, Sydney, Ill., aged 43. From infancy to the age of 20, he was the subject of a marked internal squint. At that time his father entertained a guest over night who made it his business to travel the country and straighten cross-eyes. It was considered a rare fortune thus accidentally to have presented an opportunity which might never occur again, for they were very poor, and he was willing to straighten both eyes for his lodging and \$2.50. A week later, when Dr. Strabotomist was pursuing his calling many miles away, it was considered safe to expose the eyes to the light, when the following condition was revealed.

Both eyes were deviated extremely outward, measuring with Snellen and Landolt's method,² 50° in the right eye, of which a portion of the iris was concealed under the external canthus and the lateral motion limited to 10° . With H.=I.5 D. corrected, V.= $\frac{2}{4}$. In the case of the left eye external deviation was 40° , lateral motion 15° , H.=I.5 D., V.= $\frac{2}{4}$. Direct vision was very imperfect, but by turning the head to bring objects in the visual axis of either eye he could see tolerably well. As he was very anxious to have an effort made for the correction of his deformity and bearing in mind my experience with advancement in this class of cases, it was explained to him that his muscles had been divided too far back, to correct which, as bad an operation would be attempted on the external muscles, as his \$2.50 operation had been on the internal muscles, and that it was hoped by the aid of a stitch to be able to effect a parallelism, so that he would look well and have direct vision, but he must not expect to have lateral motion, for with the lateral rectal attachments of both eyes destroyed, the must be satisfied if they were simply straight. With this understanding the operation was undertaken. A lateral incision was made above each external rectus and the hook introduced far back, exposing the muscle, which was divided outside the capsule. An internal advancement suture, to avoid subsequent deviation, was placed in each eye. The after treatment consisted of a moist compress of carbolic acid, $\frac{1}{2}$ per cent. No pain followed the operation, which was done under ether. On the fourth day there was an inward deviation of 5° , which was not noticeable. No deviation has occurred in the interval of seven years which have elapsed.

¹ The liberty is taken of reproducing this and the following case from the Pulley Method of Advancing the Rectus. N. Y. Medical Record, Aug. 8, 1885.

² Bestimmung des Schielens. Snellen u. Landolt. Handbuch der Augenheilkunde. Graefe und Saemisch, vol. iii., p. 235.
"Manual of Examination of the Eyes," Landolt, p. 49, ed. 1879.
"Traite d'Ophthalmologie," Landolt, and Wecker, vol. 1, p. 915.

The most gratifying and at the same time surprising fact, especially worthy of note, was the unpredicted amount of *lateral motion*, which in the right eye amounted to 40° , and in the left to 45° . To account for this unexpected success the theoretic explanation was advanced that both external and internal recti formed a union with the posterior hemisphere of the capsule, for it is scarcely probable that so great an amplitude of motion could be accomplished by the recti muscles acting alone on the orbital cellular tissue. Another consideration (concerning which it must be confessed some apprehension was entertained) was the danger of *exophthalmos*, consequent on destroying the ocular attachments of the two opposite recti muscles. The entire absence of this effect is likewise regarded worthy of note.

My enthusiasm led me to secure photographs of his condition before the operation, and also before his departure ten days subsequently.



Case 3.—Complete paralysis of the 6th nerve, treated by exsection of the rectus internus.—Mr. T. A. D., Oneida, N. Y., aged about 30 years, presented himself at the College of Physicians and Surgeons, New York, with a condition of complete paralysis of the external rectus of the left eye, following a railroad accident twelve years since. In the collision his head was jammed between two cars. The recovery from the injury was rapid, leaving no other effects than an extreme internal deviation with partial concealment of the iris. Some years after an unsuccessful operation was performed. Tested at the College and also at the Manhattan Eye and Ear Infirmary: V.=counts fingers at 6 inches, internal deviation about 50° , absolutely no motion.

Being in the city, the courtesy of Dr. Webster was extended in an invitation to demonstrate the *pulley* method of advancement on the following day at the Manhattan Eye and Ear Infirmary. Judging from the amount of motion obtained in the case related above, it was thought that a simple section of the muscle back of the capsule would be insufficient; that an attachment to the posterior hemisphere would probably occur and reproduce a partial internal deviation. It was therefore determined to exsect the muscle as far back as possible, the intention being to destroy the efficiency of the internal rectus. Under the influence of cocaine, the globe was rotated with fixation forceps as far to the temporal side as the contracted and hypertrophied muscle would permit, in order to allow of the introduction of the hook. Parallel lateral incisions were made, liberating the muscle, which was drawn out by the continued traction of the hook and divided at the



remotest accessible point. The anterior portion was then separated from the sclera. An external advancement suture was inserted to hold the eye in position, and it was kept moist with a saturated solution of boric acid. No especial reaction followed the operation. The stitches were removed on the fourth day. The eye was perfectly straight. No exophthalmos or unnatural appearance existed except the absence of lateral motion. After a week, V.= $\frac{2}{3}$; in a direct line had binocular fixation, but lateral motion of the head either way caused diplopia. He left the hospital satisfied, with still some little ecchymosis, rapidly absorbing.

Case 4.—Exsection of the anterior portion of the externus for the correction of a paralytic divergence

following faulty operation for internal strabismus 44 years ago.—Mrs. H., Carrollton, Ill., aged 53. At 9 years of age had an operation for the correction of convergent strabismus, resulting in an extreme over-correction of the left eye only. The angle of the deviation was 45° , and the lateral motion did not exceed 10° .

The staring effect of the divergence, combined with the loss of motion, was a constant source of embarrassment. She was especially anxious to have the deformity corrected, since in the capacity of wife of a Methodist minister she frequently changed her abode and made new acquaintances.

With an understanding that parallelism, with but partial restoration of motion was all that could be certainly secured, it was determined to advance the internus if possible; to exsect a portion of the externus if necessary.

Under cocaine an incision over the internus was made and forceps introduced to secure the retracted muscle, which was found but could not be satisfactorily advanced owing to the cicatrization and long-standing contraction of 44 years. A suture was introduced to be subsequently employed to overcome the divergence. The tendon of the externus, secured by fixation forceps, was then separated from the sclera and freed from its capsular attachments by four incisions parallel to its course. Thus permitted to assume its meridian plane, it was brought into and secured in this position by the suture previously placed in the contracted internus. Lastly the anterior contused end of the externus, thus far held by the forceps, was removed, allowing the muscle to retract into the orbit. The stitches were removed on the fourth day, when she went to her home, from which she has written expressions of satisfaction with the result. Motion is very good and I regret not being able to give it in degrees. No exophthalmos exists.

Case 5.—Exactly similar to the preceding.—Mrs. S., Springfield, Ill., aged 54 years. Operated for internal squint at 10 years of age. Slight divergence of the left eye at first, became more marked as she grew older, partly owing to the relinquishment of her accommodation ($H. = +2.5 D$). She gradually lost control of the lateral motion which was reduced to 5° , and finally consulted me concerning pain which was assumed to be due to the permanent contraction of the externus.

The foregoing considerations led to the adoption of the method of treatment employed in the previous case, with similar results, except that the lateral motion obtained was more limited, not exceeding 20° . The eye appears straight during direct vision, pain has disappeared and she has been enabled to do an indefinite amount of sewing without discomfort. No increased prominence of the eye can be observed.

Case 6.—Similar to the two previous.—M. K.,

Kansas. Mr. K. is a German Lutheran preacher. He states that extreme divergence of the right eye resulted soon after an operation for internal squint. This occurred in childhood while he was still in Germany.

One operation for the correction of his deformity had failed, but he was sufficiently intelligent to appreciate the method suggested, of first accomplishing what was possible by an advancement and then weakening the externus sufficiently to restore a balance of the opposing forces.

The mechanical procedure was a repetition of the foregoing, and the result satisfactory to the patient. The lateral excursion amounted to 35° . There was no apparent exophthalmos.

Case 7.—Dislocation of the inferior rectus, and divergent strabismus 25° , following injury; treated by exsection of the superior, tenotomy of the external, and advancement of the internal recti.—Mr. J. P., Camden, Ill., aged 30 years. Fourteen years ago, while walking under a tree, he was struck in the right eye by a broken branch, causing him to fall to the ground. For three hours he suffered pain and nausea. The eye was dressed by Dr. Mead, of Huntsville, who removed some pieces of bark, after which the swelling was too great to permit inspection for eight days. At that time the eye was found deviated upward, carrying the upper lid with it. There was no power of downward rotation. The eye deviated also outward, but had lateral motion good. He reports the condition to have suffered no change since the injury. The external deviation is found 25° , and the upward deviation 30° , and paralytic. The maximum of lateral motion not noted.

The eye appears slightly exophthalmic. The upper lid would descend by a voluntary effort, but in the condition of rest it was elevated, making the vertical diameter of the palpebral fissure one-half greater than that of the fellow eye.

By an effort at closing the lid slight downward motion of the ball was effected. The permanent upward rotation of the eye subjected the inferior portion of the cornea and adjacent sclera to continued exposure, causing it to be always congested, and at times badly inflamed, preventing sleep. No epiphora existed.

Operation.—The correction of this rare deformity was planned as two operations. The first, to restore a balance of muscular efficiency in the vertical plane. The second, to correct the external deviation in the horizontal plane.

Under the influence of cocaine an incision was made over the location of the inferior rectus. By the grasp of the forceps muscular action was observed, but owing to the extensive long-standing cicatrization, no effective advancement could be made. An inferior advancement stitch was introduced and an attachment made to the sclera. The next step was to weaken the superior rectus sufficiently to permit the enfeebled inferior suc-

cessfully to oppose the force of its antagonist. Accordingly, its tendon was detached from the sclerotic and secured by the forceps. The effect not being sufficient, the muscle was liberated from its capsular attachment by incisions parallel to its course. It was thus rendered possible, by means of the inferior advancement suture, to secure a parallelism in the horizontal plain. The superior rectus was then shortened and allowed to retract back of the equatorial meridian of the eye, that it might not overbalance the strength of the dislocated inferior rectus. The immediate result was good. Some vertical motion was restored. The lids closed naturally, covering the ball.

Three days later the patient reports slight pain since the operation. Conjunctiva much congested. Vertical motion 30° . Amount of exophthalmos unchanged, but less conspicuous, owing to the closure of the lids over the sclera.

April 20, 1888, two months later. Returned for the correction of the external strabismus, which still remains 25° . At this time there was 5° of superior deviation. Vertical motion measured 30° .

The external deviation was corrected by a tenotomy of the externus with an advancement of the internus, one suture being inserted into the muscle, and the other into the episcleral tissue forming a pulley over which the advancement can be made with precision to any required degree, securing with a bow-knot, to permit of subsequent modification, as explained in a communication to the *Ophthalmic Review*, Sept., 1887.

The following cuts, which scarcely require explanatory text, may aid in the elucidation of the method of advancement attempted in each of the above cases.

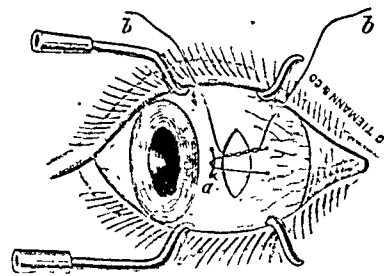


Figure 3.

By the aid of the needle, figure 1, it was found possible to insert the advancement suture, though the muscle itself could not be brought into view.

CONCLUSIONS.

The conclusions suggested by the above cases are: 1st. In the case of complete paralysis of either rectus, the exsection of the opposing muscle will enable the eye to be retained in the straight position, without motion in that meridian.

2d. In case of retraction of either rectus muscle into the orbit, under conditions rendering its advancement impossible, an equalization of the deviating power is to be obtained through section of its antagonist, posterior to its capsular attachment, following which, excursions in that meridian will be restored to an extent varying between twenty and fifty degrees.

3d. In the above cases of paralysis, or retraction of either rectus, the operation of section or exsection of its antagonist has not been observed to develop or increase any preëxisting exophthalmos.



Figure 1.

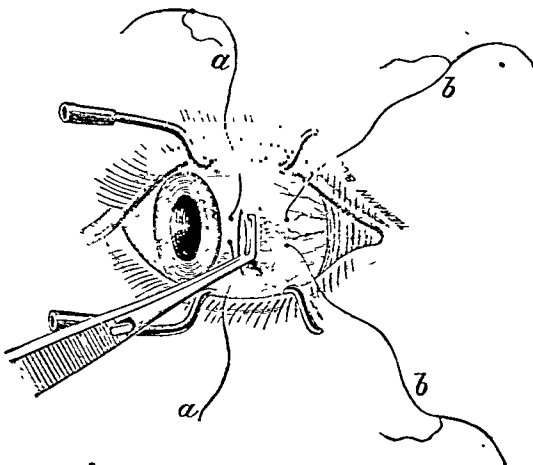


Figure 2.

ON THE CREMATION OF GARBAGE.

Read in the Session of State Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY J. BERRIEN LINDSLEY, M.D.,
OF NASHVILLE, TENN.

Very few persons outside of the limited circle whose official duties place them in constant contact with the offensive topic have any conception of the enormous amount and varied character of the filth generated by the daily life of a great city.

Hence they do not understand why it is that practical sanitarians are everlastingly harping upon cleanliness as the *sine qua non* of civic health; and earnestly calling for stringent legislation and large appropriations to enforce and carry out sanitary ordinances which shall maintain a pure soil within the city limits.

Practitioners of medicine understand that pure air, or impure air, has immensely to do with success or failure in the treatment of all diseases. Hospital and prison history for the past century, and infant mortality in cities and towns has made this a familiar fact. Few, however, understand that it is perfectly possible to render the atmosphere of even the largest cities pure enough for infants and invalids to grow and recover.

As showing the great quantity and variety of polluting material occurring without pause within the limits of a city, two or three examples may be given.

Baltimore, August, 1887, estimated by police census, had a population of 437,155. The amount of night-soil delivered at the dumps for the year ending December 31, 1887, was 51,107 loads, or 10,221,400 gallons. Probably more than half the inhabitants use water-closets, which carry off an equal amount. The dead animals, etc., removed during the same year, were:

Total number of dead animals	25,249
" " " fowls	9,074
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" " cart-loads of dead fish, vegetable and other offal removed from various docks	1,067
" number pounds of decayed meat condemned	1,495
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Richmond, population 100,000. The report of contractor for removal of garbage, or kitchen refuse, year 1887, shows total number of loads carried off, 2,680 = 72,200 bushels.

Memphis, population 62,335. Number of loads of garbage removed in 1887 was 29,120.

These examples are selected at random. To keep the city clean is the principal work of municipal governments, and requires more expenditure of money than all other objects combined, excepting schools and police.

The city filth naturally falls into four main subdivisions—street sweepings, night-soil, dead animals, and garbage. The latter alone concerns us at present. The definition of garbage is refuse animal and vegetable matter from the kitchen. Every household is a workshop for garbage. In the country and small villages many a family is poisoned by the careless accumulation of the same near the well or sleeping apartment. In small towns it is mainly got rid of by feeding to swine and cows. In larger communities by carting off and polluting harbors or rivers.

Very recently, a great improvement has been introduced, to-wit, the destruction of garbage by fire. The object of this paper is briefly, but emphatically, to call attention to a great sanitary device which is not getting into public use near so rapidly as it ought.

In the Second Report of the State Board of Health, of Maine, 1887, the Secretary, Dr. A. G. Young, says: "Of the several methods which

have hitherto been in use (for removing garbage), it may be said that none of them are free from serious objections. If the garbage is carried any considerable distance into the country its transportation is attended with considerable cost. If buried, it still often remains a nuisance by contaminating the air or polluting the water in the neighborhood. If utilized in part as food for swine or cows, there is sometimes inflicted upon the community which sends it forth a retributive penalty in the shape of an unwholesome milk and meat supply.

"In the case of a sea-board town, if it is sent seaward, the garbage may depart from the place of its origin never to return, but in large part it is strewn along other coasts.

"The great desideratum has seemed to be some method which would not require a costly transportation of the garbage, or necessitate the defilement of our sea-shores, but which would radically and ultimately destroy it near the place where it is produced.

"Within the last few years a new method of disposing of garbage has been written and talked about, and to a considerable extent put into operation and practically tested. It is the method of destroying, or cremating, garbage by means of furnaces specially constructed for that purpose. Where these furnaces have been put into use, there is pretty uniform consensus of testimony as to their success. When rightly built they have done their work satisfactorily, and generally at considerably less expense than has hitherto been incurred in disposing of the garbage otherwise. But little or no cost is incurred for fuel to run the furnace, as the garbage is dried more or less before it is burned and is made to consume itself. The cost of labor in attending the furnace is not great, and generally there are no unpleasant odors given off in the process of burning.

"This method has not been much used in this country, but in Europe, and particularly in England, it has been extensively employed. Dr. O. A. Horr, a member of this Board, who has lately returned from Europe, made special inquiry in regard to garbage cremation in England, and all he could learn convinced him this system is a success in that country. The garbage furnaces in many of their towns have been in operation many years, and, in conversation with the Health Officer of the City of London, he learned that there are now forty-five of the English towns which make use of this method of garbage destruction.

"In this country, as far as I know, the experiment of destroying garbage by means of a furnace constructed especially for that purpose, was first tried on Governor's Island, New York Harbor. A description of this garbage-cremator was given in the *Sanitary Engineer*, of August 13, 1885, by Lieutenant Reilly, at that time Acting Assistant-

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The third symptom, or more properly etiological feature, has been the *bête noire* of several amateur microscopists, who following the fashion of the time, have ascribed its *contagious* or *infectious* nature to an hitherto unlabeled parasite.

Four years ago a graduating thesis was presented to an Ohio medical college on the bacillus of the prairie itch.

The fourth and last distinguishing feature is in the observation, that although resembling scabies, yet it *does not yield to the therapies best suited to that disease*.

To bear in mind, that all cases of the prairie itch do not present these four cardinal points, but one or more are present in

Dr. Brodie, of Detroit, wrote in 1881, in which he disclaimed the entity of scabies. If correctly interpreted, the President of this Association's acceptance of this as a new disease of to-day was in fact a more moderate and unknown entity.

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One exception, however, must not be omitted; Dr. Engstad, of Dakota, has made a careful microscopic investigation, and has not found the acarus—doubtless, in many cases of the so-called prairie itch Pasteur and Koch might do as much.

My attention was first directed to the "new itch" at the Ohio State Medical Society, in June, 1882, but a typical case was not met with until nearly five months later, at which time it was said to be epidemic in Portage and Wayne Counties, Ohio, and a committee was appointed from the North-eastern Medical Society to investigate the same.

The committee reported: The disease, for the most part, to be scabies due to the acarus scabiei.

In due time letters were received, stating that the treatment and hygienic measures suggested by the committee, had proven effectual in exterminating the epidemic.

In May, 1887, through the courtesy of the late Prof. A. B. Palmer, an opportunity was offered to investigate several cases of what was popularly known as the Michigan or Lumberman's Itch, then in the hospital of the University of Michigan.

Case 1.—Male, married, light hair, æt. 40, lumberman, complained of intolerable paroxysms of tingling and itching of variable duration, succeeded by intervals of quiet, which lasted sometimes weeks, sometimes months; during these intervals the subjective symptoms were entirely absent, and the lesions on the skin healed kindly.

Family History: His mother had suffered from neuralgia, and was, in the language of the patient, a nervous woman.

History of the Disease: It first appeared in the autumn of 1883. The season of the year had no appreciable effect on its course, but sudden changes of temperature, and the atmospheric conditions preceding a thunder storm were always

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It is well to bear in mind, that all cases of the so-called prairie itch do not present these four cardinal features, but one or more are present in every case.

In 1854, Dr. William Brodie, of Detroit, wrote a paper on "Prairie Itch," in which he disclaimed for it any relationship to scabies. If correctly informed, the honored ex-President of this Association still adheres to the precepts which were advanced when the dermatology of to-day was in its infancy, when the achievements of more modern dermo-pathological research were yet unknown, when the dermo-neuroses were not mentioned; and when the large family of lichens, which have since been largely eliminated and relegated to their natural places, were supposed to belong to a distinct inflammatory group.

In the winter of 1885, it was estimated that one person in every twenty in Louisville had the itch, and the time-honored remedy of hog's

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The committee reported: The disease, for the most part, to be scabies due to the acarus scabiei.

In due time letters were received, stating that the treatment and hygienic measures suggested by the committee, had proven effectual in exterminating the epidemic.

In May, 1887, through the courtesy of the late Prof. A. B. Palmer, an opportunity was offered to investigate several cases of what was popularly known as the Michigan or Lumberman's Itch, then in the hospital of the University of Michigan.

Case 1.—Male, married, light hair, æt. 40, lumberman, complained of intolerable paroxysms of tingling and itching of variable duration, succeeded by intervals of quiet, which lasted sometimes weeks, sometimes months; during these intervals the subjective symptoms were entirely absent, and the lesions on the skin healed kindly.

Family History: His mother had suffered from neuralgia, and was, in the language of the patient, a nervous woman.

History of the Disease: It first appeared in the autumn of 1883. The season of the year had no appreciable effect on its course, but sudden changes of temperature, and the atmospheric conditions preceding a thunder storm were always

associated with an aggravation of the symptoms, and sometimes were sufficient to induce an attack. These attacks were ushered in by occasional shooting pains in the extremities, sometimes accompanied by a tingling sensation. Neither his wife nor children had contracted the disease.

Present Condition: The patient's general health is good; the eruption consists of irregularly shaped maculae and vesicles of various sizes, in places grouped, but for the most part discreetly distributed. It is confined to the forearms, hands and legs. It is quite symmetrical and inclined to a linear distribution.

The case was regarded as a *neurosis cutanea*, having a certain resemblance—save in the exemption of the palms and soles—to the cheiropompholyx of Hutchinson, or to the dermatitis herpetiformis of Duhring.

Case 2.—Male, æt. 45, single, clerk, complained of an eruption which he had first noticed three years before. It consisted of small maculae, having a dark punctate center, which had appeared on all parts of the body. Aside from the slight tingling and itching he felt little discomfort. Upon further investigation, the lesions were recognized as due to the *cimex lectularius*.

Case 3.—Female, single, æt. 30, teacher, of neurosthenic temperament. Complained of paroxysms of itching which appeared late in the afternoon, or upon retiring for the night. The family history is good.

History of the Disease: The itching began in the autumn of 1884, and disappeared in the following spring. At the next approach of cold weather it reappeared, and again disappeared the spring succeeding; in this way it has continued to the present. The patient sought medical aid, and was told that she had the Michigan itch. She slept with a sister without communicating it.

The present condition, both objectively and subjectively, is negative—the itching, since the moderation in atmospheric temperature having nearly subsided. The skin of the extremities is rough, with here and there a superficial cicatrix.

With this brief outline of the disease, it may be recognized as the *pruritus hiemalis* of Duhring.

Thus of the three representative cases of Michigan itch which, on account of their inveterate nature more than for any doubt as to diagnosis, were sent to the University of Michigan, not one belonged to other than well-known genera.

The two cases which follow occurred in private practice.

Case 4.—Male, married, æt. 46, clergyman, complained of an itching which gave him great annoyance. He was told by the physicians of his town that he had the new itch.

The history in brief is this: Four years ago, while engaged as a travelling preacher in Ver-

mont, he contracted an itchy disease of the skin, which, in due time, he gave to his six children—his wife escaped. The itching was most severe on the flexor surfaces, the hands were but little affected, and the face remained free. On the contrary, the children were first attacked on the hands.

At the time of examination the patient said he thought his disease had changed; he still complained of itching towards night-fall, but it appeared as distinct paroxysms aggravated by fatigue. The desire to scratch was irresistible, and unlike the condition preceding, it had once or twice suddenly disappeared for months, and as suddenly returned.

The present eruption too, unlike the permanent papillary rash of which he first complained, consists of whitish evanescent papules which tingle like the sting of nettles.

The children, he thought, had quite recovered.

This case is given because it brings out those points one is most frequently confronted with by the adherents of that unknown quantity—the new itch.

Thus the wife living in intimate family relationship did not contract the disease, because all are not equally susceptible to scabies any more than to variola, and bodily cleanliness may be effectually antagonistic. Later the primary disease became complicated with a neurosthenic element which, in turn, chanced to supplant it; but this may not prevent one from recognizing the first as most probably scabies, nor the second as lichen urticatus.

Case 5.—J. H., æt. 40, clergyman, complained of an itchy disease of the skin, for which he had been treated without avail.

Previous Condition: In 1870 he had what was probably eczema of the scalp, since which time his skin had given him no discomfort until six weeks ago, November, 1887, when he contracted an itchy disease from his children, they having taken it during the preceding summer while on a visit to Butler, Pa. The patient said, in the children the rash appeared first on the face, then on the body, and looked like measles.

Present Condition: The patient has a dry, rough skin, with a papular eruption, interspersed with a few small vesicles situated on the trunk and limbs; the hands and face are free. It is very itchy and prevents sleep. No acari could be found. The following day, at my request, the children were examined, and from the distinct burrows on the hands two acari were extracted, which confirmed the diagnosis of scabies.

Letters received from some of the medical gentlemen of Butler, informed me that the disease from which these children suffered was, at the time, epidemic in Butler County; that it was thought to be a new one; that its etiology and pathology were shrouded in mystery; but it was looked

upon as constitutional, and most probably contagious. It was said to yield to hydrargyri bichloridum, potassii iodidum, and solutio arsenicalis, Fowleri given internally variously combined; while acidum sulphuricum, zinci oxidum, and pix liquida, comprised the most reputed substances for external use. Woe betide the disease be it due to an inflammation, animal parasite or vegetable growth, that escapes this armamentarium.

Such a chain of evidence brought to light by this correspondence could not be withstood, accordingly the writer determined "to beard the lion in his den," and investigate the itch question of Western Pennsylvania.

Traces of the malady were heard of even before the confines of Ohio were passed, but not until Greenville was reached was a genuine case cited.

Case 6.—Was a lad who represented a household with scabies.

Case 7.—Eczema manuum.

Case 8.—Xeroderma.

Case 9.—Scabies.

At Meadville, of the several cases seen, but one will be given.

Case 10.—R. H., æt. 21, railroad employé, has had an itchy disease for a year, which prevented sleep. It has never invaded the face or hands; it was brought as one typical of prairie itch. Upon examination, he presented a papular eruption over the entire body with the exceptions cited; it was best marked on the flexor surfaces.

The patient said his hands were covered with oil while working, and he cleansed them with water and strong soap several times a day. Repeated efforts to find the *acarus scabiei* failed, but the papular lesions together with the history were sufficient, in the absence of more positive evidence, to warrant the diagnosis of scabies. The attending physician has since confirmed the diagnosis by letter, in which he says, the measures suggested at the time were effectual.

Oil City, Union City, and West Monterey, failed to satisfy the writer's desire for conquest or discovery.

Of the many cases that were collected at these places, suffice it to say, that they ranged from scabies to phtheiiasis, from erythema simplex to eczema pustulosum, from pruritus to herpes, and from pityriasis to xeroderma.

It is not that scabies has disappeared with increasing civilization as one has said, neither is it that the classical description of Cazenave does not apply to the scabies of to-day, but rather it is that we lose sight of the clinical fact that the *acarus scabiei* is only a local irritant, inducing in one a papillary eruption, which in another is vesicular, while again in others, it may become pustular.

Frequent bathing, too, and other extraneous conditions, will place a limit to its local invasion; thus it is seldom seen on the hands of people who

frequently bathe, as in the last case cited, and among refiners of petroleum the hands and fore arms remain free.

In northern climates pruritus hiemalis often adds to the complication in diagnosis, which, in many cases, can be eliminated only by the clinical history.

Again, the senso-neuroses, which are becoming more and more apparent, often baffle the most skilled. But from the mass of cases which have been examined in these investigations it is apparent, that there exists no material to form a new disease, but an appalling need of a more thorough knowledge of those we already have.

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MONSTROSITIES AND MATERNAL IMPRESSIONS.

BY R. B. JESSUP, JR., M.D.,
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Whether maternal impressions do or do not influence foetal development, is a question still before the profession. It is not my purpose to discuss this question, but simply to place on record two exceedingly interesting cases. Though we may not offer an explanation of maternal impressions, yet that is no argument against the existence of such influences. There is such a thing as establishing a fact by accumulated evidence; and should this contribution be the means of starting a series of well-authenticated reports, we might, ere long, point to the convincing evidence of maternal impressions.

The first case occurred in the practice of Dr. Ritter, of West Baden, Orange Co., Ind. The history is, briefly, as follows: The doctor was called, August 24, 1885, to a young woman, 22 years of age, a primipara, who had completed her seventh month of pregnancy. She was in heavy labor, which was terminated soon after his arrival. The child gave no sign of life at birth, but movements had been felt by the mother a few hours before labor began. The labor was perfectly normal, and the doctor, after much persuasion, secured the specimen. When seen by me it was splendidly preserved in a solution of alcohol, and is a perfect specimen of "frog-child," or anencephaloid monster. The doctor would not part with his specimen, but kindly allowed me to have it photographed, the views, in two positions, being shown.

The body is perfectly developed, and the limbs, in their minutest detail, are without defect. The eyes are prominent, as shown in the side view; the nasal bones, imperfectly developed, give a flattened appearance to the face. There is no evidence of cervical vertebrae; neither cerebellum nor cerebrum can be traced, but a flattened, hardened sac of what may have been serous fluid, fills the space from above the eye-brows to the shoulders. The skin is not developed beyond the su-

per-ciliary ridges, in front, and ceases at a point corresponding to the first dorsal vertebra posteriorly. If we complete the circumference by an irregular line passing above the ear on each side, we will include the surface not covered by skin.



This surface is well shown in the side view, and is occupied by the flattened, hardened sac, which may have been much reduced in size by the alcohol, but contains no structure, and seems to have been formed by the membranes of the brain. The portion of the surface not occupied by the sac is also covered by a membrane. The margin is covered throughout the circumference with a downy growth of hair.

Aside from the interest attaching to this rare pathological specimen, is the history, well authenticated, of the mother. In her early pregnancy she was fishing, and caught a frog on the hook. It had swallowed the hook in such a way as to make it impossible to extract it. She attempted to kill the frog by crushing its head with a stick. As soon as she saw the mutilated creature she became deathly sick, and for days sickened at the thought of it. Her offspring bore the marking of the mutilated frog, and the peculiar frog-face. There is no history of constitutional disease in either parent, and the mother has since borne two beautiful, perfect children. The cause of her miscarriage can not be explained, for she had been most careful during her pregnancy. The cause of the frog monster, marked by a mutilation, the sight of which had made the mother deathly sick, and the thought of which had sickened her for days, can not be explained. We can simply record the fact that a miscarriage did occur, and a frog-child was born, which is still preserved; and, though we may find no ex-

planation, until we do we shall believe this monster due to maternal impression.

The second case is as remarkable as the one recorded of Jacob and his method of producing striped cattle, by placing rods at their watering-troughs while the mothers were conceiving.

Mr. Wells, the president of the French Lick Springs Co., of French Lick, Orange Co., Ind., owns a valuable Morgan stallion, named Ethan, which is nine years old. While admiring this horse for the first time I asked the groom why he had whipped him so unmercifully; for along his sides were stripes, such as are made by a whip. He said the horse was born with those marks. A few questions excited my curiosity, and I sought Mr. Wells to get an intelligent and reliable account of this remarkable case. He said he had owned the horse since a colt, and knew positively that he was always so marked; that the markings had never changed, so far as he knew; there never had been any except on the sides; never any on the back, rump, neck, or under the belly.

He also said that the mother had been a pacer, on the track, for several years. That she was bred to a valuable Morgan stallion, and about the second month of her pregnancy the mare was entered in a race. She was known to be pregnant when she went in the race, but at the time it was not considered dangerous for the offspring. It was a very exciting race, and, to win a heat, the mare was whipped very hard on the last half mile. She was marked badly along the sides from the whipping. She was driven to a sulky, and the whipping was done, as it always is by jockies, along the sides, between the shoulder and hip, and above the sulky-shaft. This colt was born with these markings, and has had them since.

I examined the horse the next day. The markings cover a space, on right side, 36 inches long and 8 inches wide; on left side, 24 inches long and 6 inches wide. On rubbing the hand over the surface the ridges and hollows are felt, exactly like the welts from severe whip-strokes. These welts are most abundant on the sides, with an occasional one on the shoulder, none reaching so far forward as the collar mark, and none extending farther back than the flank. The welts are from one-fourth to three-fourths of an inch in width, and a few could be traced 20-22 inches in length. The spaces between the welts, over the ribs, where they are thickest, are from one-half to one inch in width; in places, however, they are so close as to make measurement almost impossible. Unfortunately, I did not secure a photograph of the horse, but he is there, serving in the stud at French Lick. None of his colts, so far as known, have ever been marked like him.

These cases may serve to strengthen the faith of those who believe in maternal impressions, or excite thoughtful consideration in those who would call them mere coincidences.

A CASE ILLUSTRATING THE EFFICIENCY OF DR. SENN'S HYDROGEN-GAS TEST FOR PERFORATION OF THE ALIMENTARY CANAL.

BY W. L. SCHENCK, M.D.,
OF OSAGE CITY, KAN.

Recognizing that whatever illustrates any new method in surgery is of advantage to the profession, I take pleasure in reporting the following case:

August 13, 8 P.M., I was called to see J. Williams, a strong man æt. 49 years, and City Marshal, who had been shot about two hours before. Dr. Shaw had previously reached the case and administered a full dose of morphine. Found the countenance anxious, breathing slightly accelerated and pulse 80, temperature not taken, but about normal, pain and jactitation considerable. The ball, from a 42-calibre pistol, struck the abdominal wall on a level with and 4 inches to the left of the umbilicus. There was considerable hæmorrhage but no escape of gas from the wound. The finger would not enter it, but the probe followed it for about 3 inches toward the umbilicus when, in the position the body occupied, it refused to go any further. While there was no special evidence of the bowels having been injured, we decided to insufflate with hydrogen gas. The urine drawn with the catheter gave no evidence of injury to the urinary organs. The bowels not having been moved for two days, large and repeated enemata of soap and water were administered, but with little result, no peristaltic action being excited and voluntary effort causing unendurable pain. Before we could complete our arrangement for the insufflation midnight came. The general condition of the patient seeming good, we decided rest for the remainder of the night would be better for him than an operation by lamplight. Administering $\frac{1}{2}$ grain of sulph. morph. and $\frac{1}{10}$ gr. of sulph. atrop. hypodermically and leaving morphine to be given *pro re nata*, we adjourned until 9 A.M.

August 14, 9 A.M. The patient had had a quiet sleep and, though the countenance was anxious, the face pallid, the breathing hurried and the pulse 120 and quite compressible, he was cheerful and courageous.

In a few moments we were ready to insufflate and, if need be, to operate—Dr. J. M. Heller to administer chloroform, H. C. Galliher, chemist, to attend to the gas, and Dr. Schenck, assisted by Dr. Shaw, to use the knife. At this juncture, alas! the man of the law came upon the scene to prepare for a post-mortem by an ante-mortem examination. Encouraging the patient with the thought that the operation might prove fatal, he proceeded to take his testimony. We waited impatiently until 10:30, when, with greatly increased exhaustion, after a full dose of brandy, the patient

went kindly under the influence of chloroform and ether aa, and the hydrogen gas was soon traversing the rectum, descending, transverse and ascending colon. At the ileo-cæcal valve there was a slight gurgling sound followed by a tremulous movement, which was very soon transferred to the track of the ball through the abdominal wall, and in a moment the diagnostic flame told the tale of a perforated bowel. The bladder was emptied, the abdomen shaved and washed with an antiseptic solution, and at 11 o'clock an opening made from a little above the pubic bone to 2 inches above the umbilicus, and very soon an opening was found in the ileum 3 feet from its cæcal terminus. The edges of the opening were trimmed and it was closed with Gely's suture. Six inches nearer the ileo-cæcal valve the ball passed through the gut, its exit making a wound $\frac{1}{2}$ inch in length. The edges of these wounds were trimmed and closed with a continuous suture. Four inches further up the bowel there was a solution of continuity in its peritoneal and muscular coats. These were brought together with a few stitches and, there being no other wounds near except a perforation through the mesentery, the gas was again injected, when other openings were quickly demonstrated. Twenty inches further up the bowel was a hole in the bowel near its mesenteric attachment. This being closed, it was found that a little further on the ball had again passed through the bowel, one opening being an inch in length, and the space between the openings very narrow. This was closed by folding in the peritoneal coat and making the cuff suture with a continuous stitch, trusting to adhesion of the serous surfaces and the sloughing away of the intervening portion. The last perforations were double ragged wounds extending to within $\frac{1}{4}$ inch of the cæcum. Another injection of the gas proved all the openings, nine in number, closed. The bullet passed thence behind the cæcum, bruising it as it passed, and entered the crest of the ileum $\frac{1}{2}$ inch beneath its superior border. Either the twisted position of the body when the shot was received had lifted up the colon, or it was congenitally higher than is supposed to be normal.

During the operation the bowels were kept covered with a warm solution of boracic acid, and the cavity was well sponged and washed with solutions of the acid and of bichloride of mercury. The external opening was closed, with a drainage-tube at its lower angle, the suture dusted with iodoform, covered with a pad of absorbent cotton saturated with a 5 per cent. solution of boracic acid and kept in place by a broad flannel bandage. The patient had been on the table three and one-half hours, the latter part of the time but slightly under the influence of the anæsthetic, and was nearly pulseless. Hypodermic injections of brandy and, as soon as possible, brandy and ammonia by mouth, were administered. Slight reaction occur-

ing, he was wrapped in warm blankets and removed from the operating-table, but at 4 o'clock he sank rapidly and expired.

At 7 P.M. Dr. Shaw and myself made a legal autopsy, and found the ball had passed obliquely through the abdominal wall, as indicated in the diagnosis, entering the cavity $\frac{1}{2}$ inch from the umbilicus, passing through the bowels with a very slight downward obliquity, injuring them as already stated, and imbedding itself in the ileum near its superior border. No further injury to the bowel was discovered, and the cavity of the abdomen was found well cleansed.

Whilst this case proved fatal from the extent of injury to the bowels, it admirably illustrated the efficiency of Dr. Senn's method of diagnosis. The apparent direction of the ball left room for questioning whether it had dipped deeply enough into the abdominal cavity to reach the bowels, and the general condition of the patient did not solve the doubt, while the insufflated gas quickly told the tale.

MEDICAL PROGRESS.

LOCAL ANÆSTHETIC EFFECTS OF HELLEBOREIN.—V. VENTURINI and E. GASPARINI, working in the laboratory of Professor Buffalini, at Siena, recently made the discovery that helleborein had a local anæsthetic effect. A communication on the subject was made on March 9 by Prof. Buffalini to the Società tra i Cultori delle Scienze Mediche, of Siena. The physiological effects of helleborein and helleborin were already partly known by the experiments of Schroff, Dragendorff, Marmé, Santoliquido and Paul. Santoliquido recently contemplated an investigation of the influence of these two glycosides on the heart. The local anæsthetic effects of these two substances, however, had been quite unknown hitherto. The following is a summary of the observations of Venturini and Gasparini: On the instillation of some drops of a solution of helleborein into the conjunctival sac of rabbits, complete anæsthesia of the cornea came on after fifteen minutes. Pricking with a needle was not felt by the animals. The same results were also obtained in experiments on dogs, without any interference with the function of the pupils or eyelids or with vision. The experiments were then repeated with a solution each drop of which contained about 0.0005 grams of the glycoside; the same anæsthetic effect was produced on the cornea after an interval of fifteen minutes, when 3 or 4 drops of this strength were injected into the eye. The cornea regained its normal sensibility in half an hour from the commencement of anæsthesia. No bad after-effects were observed on the subsequent days. Venturini and Gasparini consider that, in operations on the eye, helleborein is pref-

erable to cocaine, as its effect is limited to the cornea, and does not affect the sensibility of the other parts of the eye in any way. They conclude that: 1. Helleborein, even in a very diluted solution, produces complete anæsthesia of the cornea, without irritating the conjunctiva or the cornea. The anæsthesia produced by this substance is of longer duration than that obtained with cocaine. 2. Though the anæsthesia is complete, there is no relaxation of the eyelids. 3. No change in the pupil or in the intraocular tension is observed. 4. Helleborein causes local anæsthesia in the parts into which it is injected. As, however, it has a powerful cardio-toxic effect, its application to the cardiac region requires great precaution. Whether the influence of the helleborein is to be ascribed to the helleborin (as Professor Buffalini thinks) has yet to be decided.—*British Medical Journal*, August 4, 1888.

ELECTRICITY vs. LAPAROTOMY IN INFLAMMATORY AFFECTIONS OF THE UTERINE APPENDAGES.—DR. EGBERT H. GRANDIN, of New York, says:

The class of cases in which I would contend electricity will prove as serviceable, and frequently more so, than laparotomy; and this, too, without subjecting the woman to the slightest risk, are those in which careful exploration, if necessary under anæsthesia, fails to suggest the presence of pyosalpinx. Disease of this nature calls for speedy and radical action. The knife is here indicated, even as it is in any other region of the body where pus is predicated. A history of recurrent attacks of pelvic peritonitis should constitute the call for laparotomy, lest the next attack should eventuate in a general peritonitis fatal to the patient. Where, however, the careful bimanual exploration of the patient, the rational history and the appearance do not suggest the likelihood of pyosalpingitis, then the greatest palliation, if not entire cure, may be predicated from resort to electricity. The conditions termed catarrhal salpingitis, pachysalpingitis, perisalpingitis, perioophoritis, I would include in the class which may properly be subjected to electricity rather than to the knife.

When I first began to systematically use electricity in my gynecological practice, I deemed it contraindicated in acute pelvic peritonitis—the term under which, for the sake of brevity, I would include the affections just referred to—and to be used with caution in subacute instances. With increased experience I have learned that the agent may not alone be resorted to with safety, but with benefit as well, where the condition is acute. By means of electricity the circulation is regulated, absorption is favored, and we effectively counter-irritate. The technique of the application I have so recently described that it is unnecessary here to do more than lay stress on certain of the cardinal

principles. Notwithstanding the advocacy of Apostoli, Engelmann, and others, I am not convinced that it is at all essential to success to use currents of great intensity. Indeed, in certain instances, I am satisfied that I obtain greater benefit through resort to weak currents of considerable duration. The action of the current is thus more prolonged, and the effect more lasting. The non-active pole, and this will ordinarily be the negative pole, should cover as large a surface as possible, the abdomen being the preferable site for its application. As long as there exists tenderness on pressing the vaginal vault, or pain in imparting motion to the uterus, galvanism is indicated, the positive—the anæsthetic, alterative pole being placed within the vagina. When the symptoms have disappeared, faradization, first the primary current, and later the secondary, will be found most effectual in completing the cure in so far as this is possible. In the intervals between the séances, and these should be held every other day, at the outset, the uterus should be gently supported by a wool tampon—the organ should not be crowded up by a number of tampons packed as solidly as possible into the vagina, for thus as much harm is done to the ligaments, blood-vessels, and adjacent organs in an upward direction as they suffer when, without the tampon, the uterus sags downward. Attention to these simple rules is strictly essential to success. Through resort to electricity the gynecologist may not gain such great renown as the operator who can boast of a long series of operations, and who can exhibit to colleagues and to patients the bottled specimens, emblems of his prowess, but he will have the satisfaction—no mean one—of knowing that he has relieved suffering without risking life, and he will find that a reputation for conservatism bears golden fruit in plenteous harvest.—*Medical Record*, August 25, 1888.

CAN THE MOTOR AREA BE REMOVED IN LARGE PIECES WITH IMMUNITY FROM SERIOUS CONSEQUENCES?—In his Address at the recent annual meeting of the British Medical Association, DR. WM. MACÉWEN said: If this region be of such psychical importance to movement, and destructive cortical lesions in it are followed by secondary degeneration of the motor tracts, then excision of these areas will necessarily induce permanent paralysis, late rigidity, and ultimate structural contracture. The removal of large wedges from the brain, especially in the motor centres, will induce serious effects upon the brain as a whole, causing, during cicatrization, a dragging and displacement of the neighboring parts, with final anchoring of the cerebrum to the cicatrix. In an acute ulcerative process rapidly advancing, such as an abscess, none can hesitate to evacuate the pus; it is not the living brain-substance which is removed, but the peccant matter alone. Epilepsy presents

quite another aspect. In the presence of a stationary cicatrix, or of a slow-growing neoplasm in the motor area, occasionally producing fits, few would attempt the removal of such a large wedge of the motor region as to induce permanent hemiplegia. Even when the fits are much more numerous and aggravated, it is serious to contemplate the production of hemiplegia while attempting the cure of the fits. No doubt these epilepsies, when long continued, especially in early life, are apt to lead to great and extensive instability of the motor cortex, so as to warp the whole cerebral function, and ultimately involve life itself. Still, how much better is the cure by the removal of a large wedge, involving the greater part of the motor area? How many people would submit to have their upper and lower limbs, on the same side of the body, amputated by disarticulation at their proximal joints—for this is what the hemiplegia amounts to—in the process of cure of their fits? Numerous epileptics have been asked the question by me, but none have expressed their willingness to undergo such a cure. Even had they done so, the circumstances would require to have been exceptional to have induced one to hazard the life of the patient for so poor a result. It is true that corresponding wedges have been removed from the brain of monkeys, and these animals have survived for months thereafter. In men also they have been removed by others; in one instance reported to me the patient remained completely hemiplegic until his death some months after. Nor is the removal of very large tumors and large wedges of brain free from immediate peril to life. In several instances operated on elsewhere, death has ensued—one while the tumor was being removed from the brain, and one immediately after the completion of the operation.

In cerebral surgery, not only does one require to localize the lesion, and to select suitable cases, but also, after exposing the brain and its lesion, to judge when to advance and when to hold the hand. In a case rightly localized from the motor symptoms, a tumor was exposed in the leg and arm centres, on the left side of the brain; but its dimensions were such as to cause me, after carefully contemplating them, to refrain from removing it, as it would have led to a hemiplegia of a much more pronounced character than was present. Instead, the vessels which supplied it with nutriment and which ran into its substance, from the surface, were all ligatured, in the hope that this would effect a restraining influence on its growth. The patient recovered and is considerably improved. Though the fits are not quite cured, they are not so severe as formerly, and are somewhat altered in character.—*British Medical Journal*, August 11, 1888.

THE PHYSIOLOGICAL ACTION OF ONOBAIO has

been investigated by MM. HENRY DE VARIGNY and PAUL LANGLOIS. Onobaio is an arrow poison used by the natives of Obock in the form of a hard resinous ball. A 1 per cent. solution was made with some of these balls. It was found that injections of 5 or 10 milligrammes of this solution kills rabbits and guinea-pigs very quickly. The animal is bent double; it leaps about, then falls over on its side, making efforts to breathe, and dies with well-marked symptoms of asphyxia. If the animal is then opened the heart will be found to be perfectly still. The ventricles no longer beat; a slight action is still observed in the auricles. The lungs are pale and anæmic. During life no disturbance of motor power or of sensibility is observed. One or two milligrammes were injected under the skin of a frog in which the heart had been laid bare. After a few minutes it was found that the ventricle became contracted after auricular systole; this phenomena increased: four or five minutes after the injection the quantity of blood entering the ventricle at each auricular systole became infinitesimal, and finally none passed in. The ventricle ceased to act; the auricles continued to contract for ten to fifty minutes. The following experiments were made upon dogs which had been subjected to the action of chloral and curare. In one case a large dose (1 centigramme of onobaio in 1 cubic centimetre of water, injected in about a minute) caused cardiac disturbance, without any definite respiratory symptoms. To avoid the direct action of the poison on the endocardium a solution of 1 milligramme in 1 cubic centimetre of water was injected into the veins at intervals. In the case of weak doses (4 millig. to 13 pounds of the animal's weight) the breathing became much slower a minute or two after the injections. This phenomena, which was not accompanied by notable cardiac disturbances, lasted one or two minutes, and then ceased. Larger doses (8 milligrammes to 11 pounds of weight, administered in four injections in about half an hour) quickened the breathing for a few instants. The breathing then became gradually slower, and at the end of two or three minutes entirely ceased. The heart continued to beat, but subsequently became slower, and finally ceased. In an experiment with 6 milligrammes to 11 pounds of the weight the cessation of the respiration did not arrest the action of the heart. Artificial respiration was practiced; the heart continued to beat, and at the end of a few minutes the respiration became natural. Onobaio sometimes causes vomiting in animals which have not been previously brought under the influence of chloral.—*British Medical Journal*, June 30, 1888.

NAPHTHALIN IN PLACE OF ARSENIC AS AN INSECTICIDE.—HAGER calls attention to the dangers attending the use of arsenic and its prepara-

tions as an antiparasite and vermin-killer. He strongly recommends to use naphthalin whenever arsenic would be indicated for the above purposes. He gives, among others, the following formula:

Naphthalin	40 parts.
Chloroform	80 "
Benzine	100 "

mg.

Heat carefully to about 20° C., and agitate till the naphthalin is dissolved. American petroleum may be substituted for the benzine. These solutions may be applied as they are to the skin of animals infested with vermin, or they may be applied in a diluted state. The naphthalin may be incorporated with vaseline if an ointment is desired for use, or if an oily liquid is wanted the above solutions may be mixed with liquid vaseline in the proportion of 200 of the former to 1,200 of the latter. Hager also speaks highly of the infusion of quassia as an antiparasitic application.—*Pharmaceutical Record*, May 15, 1888.

SALT IN THE SICKNESS OF PREGNANCY.—In a recent number of the *Medical Press* Dr. GREENE records two cases of sickness of pregnancy treated successfully with common salt. In the first case the salt was given in 5 grain doses in 1 ounce of chloroform water. The sickness lessened after the first dose, and ceased entirely when six doses had been given. The medicine was continued three times a day until the end of gestation. In the second case the same result was obtained. The action of the salt in these cases may have been due to its antacid properties; in both cases the secretions were very acid, but soda, potash, and ammonia had no good effect. Dr. Green suggests that, as some patients might think the remedy too simple, it should be prescribed by its clinical name—chloride of sodium.

SUBSTITUTE FOR MILK IN INFANTILE CHOLERA.—TEDESCHI recommends the following as a substitute for cow's milk:

White of eggs	15 grams.
Oil of sweet almonds	35 "
Sugar of milk	40 "
Carbonate of soda	0.40 gram.
Common salt	0.20 "
Neutral phosphate of lime	2.50 grams.
Water	1 litre.

Make an emulsion.

PILLS FOR COUGH IN EMPHYSEMA AND CHRONIC BRONCHITIS.—The following pills were used by the late GUÉNEAU DE MUSSY:

Purified tar	2 grams.
Dover's powder	3 grams.
Powdered benzoin, q. s.	

Make 40 pills.

S. Take 2 to 6 pills daily.

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SATURDAY, OCTOBER 13, 1888.

THE STUDY OF DISEASES OF CHILDREN.

At the recent annual meeting of the British Medical Association DR. W. B. CHEADLE, President of the Section of Diseases of Children, took as the subject of his address "The Present Position of the Study of Diseases of Children in Relation to Medical Education." This address is at once instructive and suggestive.

Dr. Cheadle doubts the wisdom or propriety of elevating diseases of children into a specialty—of separating them from the general study of medicine and surgery. Art is still too narrow, and human wit too broad to make such a specialty, Dr. Cheadle thinks; and but for the larger experience at the great general hospitals our knowledge of childrens' diseases would be much less. Doubtless there are very many that will not share this opinion. Still, the fact remains that in medical education the vast importance of the thorough study of disease as seen in children is but imperfectly realized. While it may be true that a specialty of diseases of children is unnecessary, special study of diseases of children is necessary. General practitioners form the bulk of the profession, and the majority of their patients are children, whose bodies are peculiarly susceptible to diseases and treatment, their diseases requiring a nicety of discrimination and a delicacy of skill in management beyond what is required in adult cases. As a rule,

too, many of the disorders of early life require immediate treatment; and to wait for the specialist is to lose time.

"The death rate of children is almost ten times as great as of adults; and yet to fight against this we are content to send out our students unpracticed, inexperienced and untaught." This, says Dr. Cheadle, is a serious blot upon our system of medical education. Almost forty years ago Dr. Latham, Sir Thomas Watson and others, pointed out the very defective condition of knowledge with regard to diseases of children, and insisted on the urgent necessity of more adequate provision for instruction in the subject. Dr. Cheadle fears that the situation is very much to-day what it was then—and he speaks as whilom dean of a medical school, as physician to a general hospital as well as one for children, and as an examiner in medicine for about ten years. As an examiner he has always made it a point to set questions in diseases of children, and his uniform accumulated and accumulating experience is that the candidates, as a rule, are lamentably ignorant of this subject. Many of them are destitute of any clinical experience of the common diseases of infancy. It is a fact, and certainly one to be deplored, that many general practitioners dread to be called upon to treat a sick child; they find extreme difficulty in making any clear diagnosis; and many treat all little children on "general principles," as though all children were alike.

As a matter of fact, the practitioners that treat children skilfully and on scientific principles, have for the most part learned what they know after graduation. Some hospitals, as we know, do not receive children of less than 2 years of age, except in special and urgent cases. But it is in the first two years of life that we mostly encounter the diseases distinctive of infancy and childhood. This is the period in which the congenital faults of structure and of inherited disease manifest themselves, and when the troubles of feeding and dentition, with their consequences, occur.

In the way of reform Dr. Cheadle suggests:
1. That the examining bodies make it clear that a competent knowledge of diseases of children will be required of candidates in their final examinations. 2. That they also require, as a part of hospital practice, an attendance of three months on a course of clinical instruction in diseases of children, which shall include those of early in-

fancy, at either a general or special hospital. 3. That children under 2 years of age be admitted freely to the childrens' wards of general hospitals and to special hospitals. 4. That an organized system of instruction, both practical clinical instruction and lectures, be introduced at each medical school.

Since a very large proportion of the patients of the general practitioner are children, and seeing that infant mortality is so much greater than adult mortality, no argument is required to show that medical students should receive adequate instruction in diseases of children, and that they should be thoroughly examined as to their competency to diagnose these diseases and treat them.

The defective education in diseases of children by the medical colleges and hospitals of Great Britain as represented by Dr. Cheadle, certainly does not exist to the same extent in this country. A very large proportion of our medical schools have a professorship of diseases of children filled by an active and efficient teacher, and with which he connects one or two clinics each week in the childrens' department of a hospital or dispensary, to the latter of which especially, children of all ages have access. And attention to the instruction in this department is as obligatory upon the medical students as to that in any other department of the college curriculum.

CAUTION IN RECTAL INSUFFLATION WITH HYDROGEN GAS.

Senn's paper, entitled, "Rectal Insufflation of Hydrogen Gas, an Infallible Test in the Diagnosis of Visceral Injury of the Gastro-intestinal Canal in Penetrating Wounds of the Abdomen," received merited attention, at the time of its presentation before the Section on Surgery, at the last meeting of the American Medical Association. Since the publication of this remarkable essay, numerous cases, illustrative of the procedure, have appeared in various home journals. Dr. W. L. Schenck, of Osage City, Kansas, reports a case of interest in this connection, that appears elsewhere in the columns of the present issue of THE JOURNAL.

As yet, no untoward results have been recorded, and the belief is general that the method is totally

devoid of risk. This impression, however, is erroneous. There are at least two possible sources of danger in the use, or rather misuse, of the plan that deserve serious consideration. As at present informed, these items have received adequate attention neither in the original paper, nor in later discussions of the procedure. It is the purpose of this note not to enter into a criticism of Senn's really brilliant effort, but merely to mention certain precautions, that are at once simple, rational and necessary.

In so far as rectal insufflation with hydrogen gas is a problem in chemistry, it postulates chemically pure hydrogen, and absolute freedom from atmospheric air. Now, it is apparent that these two conditions may not always be supplied with ease. As the difficulties in the practical details of the method appeal most directly to the chemist, we have sought responsible opinion from an eminent professional source. In reply to our inquiry, a distinguished teacher of chemistry writes:

"I believe Professor Senn, himself, says that he has never seen any bad effects result from the use of the gas, and I have no doubt that in skilful hands, such as his, there would probably never be any danger in its employment. But I can readily imagine that a careless and inexperienced operator might meet with unhappy results in at least two ways:

"I. Unless the hydrogen were generated from perfectly pure material, it might contain impurities of greater or less toxic power. The most dangerous of these would be hydrogen arsenide (arseniuretted hydrogen), which is one of the most powerful poisons with which we are acquainted when inhaled into the lungs, and *presumably* quite dangerous, also, when injected into the bowels. Since both sulphuric acid and zinc, as ordinarily found in commerce, are usually considerably contaminated with arsenic, the hydrogen given off from such material would be quite rich in the poisonous hydrogen arsenide. Professor Senn directs that pure zinc and acid be used; but a careless operator might forget or neglect this and use commercial material, with results that I fear would be exceedingly unpleasant, if not dangerous.

"II. There is certainly danger of getting a mixture of atmospheric air with the hydrogen, either by faulty generation or by unskilful manipulation during insufflation. In that case, an

explosion would be likely to occur, upon applying a light, which might do considerable damage. Care, however, could remove this danger wholly, for a skilful operator would assure himself of the purity of his hydrogen before using it, nor would he permit it to become contaminated during use. As there is but a very small amount of oxygen in the intestinal gases,* I think there would be no danger of an explosive mixture being formed after insufflation of a pure gas.

"I think we may conclude, therefore, that Professor Senn's method is entirely destitute of danger in careful hands; but if unskilfully employed we might very possibly have bad results either from a poisonous gas, or from an explosive admixture of air. This, however, does not detract from the value of the procedure, for scarcely any operation in surgery is safe unless carefully conducted."

THE MEDICAL EXAMINING BOARD OF VIRGINIA.

A few weeks ago we called attention in *THE JOURNAL* to the excellent work that has been done by this Board, showing from the work that boards of examiners like the Virginia Board are a necessity for the protection of the public from incompetent practitioners. We need not again go over the ground covered by that editorial article. The readers of *THE JOURNAL* will remember that the editorial in question was favorably commented on in our pages by so excellent a teacher and so learned a physician as PROFESSOR WILLIAM OSLER, of Philadelphia, who, though a graduate of a Canadian school is now a teacher in one of the high-class medical schools in the United States.

It will be remembered that we said in our editorial article that the opponents of the Medical Examining Board of Virginia were made up chiefly of the teachers in the Medical College of Virginia, and the students of that college; and that the reason for their opposition is the fact that the Medical Examining Board of Virginia has shown conclusively that the Medical College of Virginia—with some other colleges in the country—is not doing creditable work. We pointed out that the remedy for colleges, whose students have not stood well before the Virginia Board, is in their own hands. If they will teach

their students as they should be taught there would and could be no complaints.

It seems, however, that the teachers in the Medical College of Virginia, and a few who sympathize with them, prefer to remedy (?) the matter in another way. The Medical Society of Virginia meets in about a week, and the teachers in the Medical College of Virginia will go to Norfolk for the avowed purpose of "ousting" the present members of the Board. Perhaps they have some of their sympathizers that they wish to elect or have elected members of the Board by the Medical Society of Virginia. With some knowledge of the *personnel* of the Virginia Society we do not for a moment believe that they will put out of office men who have done their duty, and their whole duty in so far as they could, to the profession and the people of Virginia. By doing this the Medical Society of Virginia would declare practically in favor of a low standard of medical education—and we do not for a moment believe that the Society will do this.

Some of the teachers in the Medical College of Virginia, and their friends, have said that the recent editorial in question was written by members of the Medical Examining Board of Virginia, or that it was written in Richmond. Some of them claim to recognize "Richmond ear-marks." The editorial was written in Chicago, by a regular editorial writer of *THE JOURNAL*, and the sole basis of the editorial was the last report of the Medical Examining Board of Virginia. It was written by a disinterested person, and, so far as the particular Board and State are concerned, from disinterested motives. The sole motive in writing the article was to show what a good Examining Board could accomplish in the way of protecting the public against badly taught and incompetent graduates of schools that do not do good work. We were convinced when the editorial was written that we were in the right, and subsequent events have shown that we were right. We were convinced that the Virginia Examining Board was and is doing good work, and we are still convinced of it after looking into the matter more closely. We were equally convinced that the Medical College of Virginia—and other colleges mentioned—were doing bad work; and of this we are still convinced. And this conviction is strengthened by the attempt to be made at Norfolk to remove honest workers from the Board.

*Gautier. *Chimie appliquée à la physiologie, à la pathologie, etc.*, vol. i, p. 425.

We hope the Medical Society of Virginia will not be guided by a few men who wish to cover up their bad work. Will the teachers in the Medical College of Virginia openly acknowledge that their work is bad, and their graduates incompetent to practice medicine, by attacking the Board? We hope not. Would it not be better for themselves, for the college, for the profession of the State, and for the public, if they would resolve to teach their students so that they may take equal rank with the graduates of the University of Virginia? Do the students of the Medical College of Virginia wish, on the plea of ignorance and incompetency, to be admitted to practice without examination? That is what their petition to the Virginia Legislature last winter amounted to. Will they not rather demand of their teachers that they place them on equality with all other students and graduates, by instructing them so that they shall be competent practitioners of medicine. The remedy, as we said before, is in the hands of the colleges, not the Legislatures. The Virginia Legislature may grant the degree of Doctor of Philosophy to every graduate of the Medical College of Virginia; but that will not make them philosophers. It may enact that each of those graduates is learned in medicine; but that will not add anything if their teaching has been such that they cannot pass the examination of the State Board. No one can be made moral by act of Parliament—and no Legislature can enact a knowledge of medicine into the mind of any student. As we know the tree by its fruit, we know the college by its graduates. "A fair field and no favors" is all that any competent man wishes.

TRANSACTIONS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS.

The full proceedings, addresses, papers and discussions of the International Medical Congress at Washington, September, 1887, have been published and distributed to the members and others who were entitled to copies; making five royal octavo volumes of over 760 pages each, an aggregate of 3,800 pages, and about 600 illustrations. The Transactions of the great International Medical Congress at London, in August, 1881, are comprised in four royal octavo volumes averaging 638 pages, an aggregate of 2,552 pages and 180 illustrations.

It will be seen that the Transactions of the Washington Congress contain nearly one-third more printed matter and three times as many illustrations as those of the London Congress. For style of printing, quality of illustration, and we may venture to add for value of matter, they will bear favorable comparison with the Transactions of any one of the preceding International Medical Congresses. Much credit is due to ex-Secretary-General Hamilton and his assistants for the expeditious and excellent manner in which they have executed their laborious task.

EDITORIAL NOTES.

DEATH FROM CARBOLIC ACID.—At Milton, Ohio, on October 6, a 3-year old child secured a bottle of carbolic acid and a teaspoon, and began feeding it to the baby brother in the cradle. The screams of the baby attracted the mother, who was outside, and when she reached its side it was gasping for breath and died in a few minutes. It seems almost incredible that anyone having any business with carbolic acid could be so criminally careless as to leave the poison within reach of a child.

LARGE INTESTINAL DIVERTICULUM.—In the *Centralblatt für Gynäkologie*, No. 17, 1888, MAAS, of Würzburg, reports the case of a boy, æt. 14 years, whose abdomen began to enlarge soon after birth, and continued to enlarge until a year before the lad came under treatment. It then became much larger, and the boy had dyspnoea and palpitations. The bowels moved frequently, but the stools were scanty and thin. The abdominal walls were very tense, though not œdematous. The urine was normal; the skin pale; some subcutaneous veins were uniformly dilated. The abdomen measured 35.5 inches at the umbilicus, and 3 inches higher the circumference was 39 inches. There was uniform tympanitic resonance, and the lateral impairment was slight. No solid tumor could be detected. An enema was given, and much fecal matter was passed. When a sound was passed into the rectum it could be felt apparently over the tumor, under the parietes, and hence a diagnosis was made of congenital hydro-nephrosis on the left side, or cystic degeneration of the kidney. An exploratory puncture in the left loin with a large trocar allowed some feces to

escape, and an incision was then made along the linea alba. The surface of the tumor was covered by a large plexus of veins. The operators feared to proceed, and the abdominal wound was closed. There was no subsequent peritonitis; but a sudden increase of the swelling was followed by intense dyspnoea, and this by sudden death. The autopsy showed that the tumor was an immense diverticulum from the upper part of the rectum, containing some gas and 14 litres of thin fæces. The communication with the rectum was at the posterior inferior part of the pouch. The rectum was strongly compressed by the tumor. Kölliker and Maas attribute the diverticulum to a disturbance of the normal involution of the blastodermic layers.

SOCIETY PROCEEDINGS.

American Surgical Association.

Annual Meeting, held in the Main Hall, Grand Army Building, Washington, D. C., September 18, 19, 20, 1888.

(Continued from p. 499.)

TUESDAY, FIRST DAY—AFTERNOON SESSION.

DR. W. W. KEEN, of Philadelphia, read a paper on

THREE SUCCESSFUL CASES OF CEREBRAL SURGERY,

including: 1. The removal of a large intracranial fibroma. 2. Exsection of damaged brain tissue. 3. Exsection of the cerebral centre for the left hand.

Case 1.—Large tumor in the cerebrum, probably arising from an injury at the age of 3 years; tumor removed at 27; hernia cerebri; recovery.

The patient, a young man of 27, at 3 years of age fell, striking his head on some bricks. At 5 he had measles followed by discharge from the right ear, impairing hearing. In February, 1885, epilepsy supervened, with intense pain in the head. About April right-sided hemiplegia was complete, with aphasia. Right pupil was largely dilated and irresponsive to light; vision imperfect.

When first examined by Dr. Keen the only remnant of his former condition was epilepsy, hesitation of speech and headache. In the attacks the head and neck were turned to the left, while the body was turned to the right. Convulsions general. Right pupil larger than left. A small scar was decided on as that resulting from the accident. This was $\frac{1}{2}$ inch above and in front

of the left superior stephanion, $2\frac{1}{4}$ inches to the left of the middle line, and 3 inches behind the external angular process. The temperature on the left side of head was 1° higher than on the right. Dynamometer recorded right 30° , left 35° . Left knee jerks normal, right subnormal. Diagnosis, probable tumor at the base of the frontal convolutions, involving the centres for the leg, arm, face and speech.

The operation was performed December 15, 1887. A $7\frac{1}{2}$ inch trephine was applied over the seat of the scar. This opening was enlarged 3 inches. A tumor was discovered and removed. It weighed 3 ozs. 49 grs. Its size was $2\frac{3}{8} \times 2\frac{1}{2} \times 1\frac{3}{4}$ inches. Hæmorrhage was abundant and checked with difficulty. The wound was dressed antiseptically, drainage being provided for. The wound was followed by hernia cerebri. This showing no tendency to cicatrize, thirty-four skin grafts were applied. In ten weeks cicatrization was complete. The elevation was then followed by a concavity. The tumor proved to be a fibroma, a rare form of intracranial tumor.

Case 2.—Simple depressed fracture followed in four months by epilepsy; thirteen months later trephinement and removal of damaged brain tissue; recovery in seven days; cure of epilepsy to date. Young man 25 years of age. In November, 1886, he fell nine feet, receiving a severe blow on the right side of the head. He was unconscious for a considerable time. There was temporary loss of feeling in the three left ulnar fingers. On tapping the head on the right side he produced a "cracked pot" sound. Epilepsy began in March, 1887. Up to April he had had five positive attacks. The diagnosis was traumatic epilepsy from depressed fracture, centre for left hand and supramarginal gyrus involved. Operation was done April 12, 1888. As soon as the flap was raised the bone was found to be splintered. A $1\frac{1}{2}$ inch disc of bone was removed. The dura mater had been rupured. A small piece of bone had been forced through the dura mater and had become adherent to its under surface. The brain substance had also been ruptured. A cyst $\frac{1}{4}$ inch in diameter was found connected with the piece of bone. All of the brain substance that was altered in character was removed. This piece was $\frac{1}{4}$ inch long by $\frac{3}{4}$ inch in width. The button of bone was perforated and attached with chromic catgut to the flap, so that the bone could not fall in upon the brain substance.

The wound was healed in seven days. After the operation there was paralysis of the hand as regards flexion. That night flexion was recovered.

Note made May 28, 1888, shows that the disc of bone is adherent, mental and physical condition excellent, flexion of fingers normal. The iris of the right eye, twenty-four hours after the operation, responded separately as well as its fellow. This isolated symptom of want of proper

reaction of the right iris is probably a new observation, and may be valuable in the future in determining and better localizing the right centre. In this case there have been no epileptic attacks since operation. In the first case there were several attacks during the past summer.

Case 3 was one involving the removal of the centre for the left hand and wrist. The operation was followed by recovery.

The patients were presented.

SECOND DAY—MORNING SESSION.

DR. HUNTER MCGUIRE, of Richmond, Va., read a paper on

THE FORMATION OF AN ARTIFICIAL URETHRA FOR PROSTATIC OBSTRUCTION.

He said: It has been my lot to meet with a number of cases of hypertrophy of the prostate gland, which produces more or less obstruction to the passage of urine. These are conveniently divided into three classes:

1. Cases where the obstruction was due to temporary congestion of an already enlarged gland, which yielded to the ordinary treatment and did not return.

2. A class of cases where the obstruction to the passage of urine was permanent but not great. Attention to the general health, the occasional introduction of the catheter and washing out the bladder were all that the cases required. These cases are, however, never free from danger from exposure, etc., and gradual enlargement may go on and bring about the condition met with in the third class.

3. In these cases the obstruction is great and fixed, micturition is frequent and difficult, perhaps impossible without the aid of the catheter. The introduction of the instrument grows more and more difficult, offensive residual urine is always present, and the general health suffers greatly. Cystitis, localized or general, is a painful and pronounced symptom. Violent tenesmus of the bladder, provoked by the obstruction, injures the vesical ends of the ureters, possibly a reflux of stale urine is driven into these canals and ureteritis follows, then pyelitis and pyonephrosis, from which the patient dies.

The paper was devoted to a consideration of surgical interference in this third class of cases. He was led to resort to the measures described from the following circumstances: During the past eight months four cases of stone in the male required the suprapubic operation; two because of organic stricture; one because of the large size and hardness of the two calculi the bladder contained; the fourth because the stone was large and hard and the patient too anæmic to bear the shock and loss of blood which often accompanies section through the rectum.

In one of the cases of stricture, in a man 65 years of age, the patient had, two years before coming under observation, a second cause of obstruction. A well organized stricture was found in membranous portion of urethra. Prostate was enlarged, more marked on the left side. Urine showed no evidence of renal disease. An oxalate calculus $\frac{3}{4}$ inch in diameter was also recognized. The high operation for stone was performed. The bladder walls were found thick and unyielding, and contracted. The left side of the gland jutted into the bladder $1\frac{1}{2}$ inches further than the right side. The middle lobe was of the size of the thumb and almost completely closed the urethra. It was decided to retain a fistulous opening through which urination could take place. This tract was $2\frac{1}{2}$ inches long and extended upward and forward. In its passive state it was closed by the pressure of the parts through which it passed. When the bladder became full and contracted the urine was forced through the fistulous tract. He can now retain water for two or three hours, and has voluntary power both to retain and expel urine.

The second case was a man 69 years of age who had been cut for stone in 1881. In 1883 I found the prostate enlarged and cystitis present. He was given a gum catheter and shown how to use it. In 1886 electrolysis was employed without success in trying to reduce the size of the prostate. July 4, 1888, an operation similar to that performed in the first case was done, with equally good results. At times he is able to retain urine for six hours. He never has any desire to empty the bladder, no matter how full the organ is.

Mode of Operation.—The night before the operation the bowels are opened. On the day of operation 15 to 20 grs. of quinine are administered. Antiseptic precautions are adopted throughout. The bladder is washed out with a weak solution of carbolic acid in hot water. An empty gum bag capable of holding 12 ozs. is passed into the rectum. About 12 ozs. of water are then introduced into it. This pushes the bladder above the pubes. The bladder is next filled with a hot solution of carbolic acid. The use of force should be avoided. The penis is tied with a piece of rubber tube to prevent escape of the fluid. A vertical incision is next made, beginning 3 or 4 inches above the pubes and extending to the symphysis. This extends to the linea alba. The incision in the latter should be from $\frac{3}{4}$ to 1 inch shorter than that through the skin. When the transversalis fascia is reached it should be divided, but not for more than 2 inches, but should reach to the pubic bone. The fat and cellular tissue between the transversalis fascia and bladder is separated with the handle of the knife; this tissue should be disturbed no more than necessary. The bladder is now drawn forward with a tenaculum and opened as low down as possible. The interior of the or-

gan should be carefully explored with the finger.

Sutures should now be applied, extending down to but not including the recti muscles. The opening left in the skin should be at the upper extremity of the wound, so that the fistula will be oblique and from $2\frac{1}{2}$ to $3\frac{1}{2}$ inches in length. A catheter is passed through this opening. If the catheter causes annoyance it may be at once removed, otherwise it is better to allow it to remain a few hours. The dressing consists of a pledget of absorbent cotton changed as often as necessary. In none of my operations have I met with the peritoneum.

In the after-treatment it is important to keep the urine acid, for acid urine is aseptic. In operating on these cases and in the high operation for stone, the amount of blood lost has not exceeded 2 drachms.

DR. JOHN H. PACKARD, of Philadelphia, read a paper on

SUPRAPUBIC CYSTOTOMY.

The present paper was supplementary to one on the same subject read by Dr. Packard at the last meeting, and was intended to correct an accidental omission of the views of Sir Henry Thompson. These were now considered, extensive quotations from the works of this author being given. Two cases were reported, in one of which the operation was performed for the removal of a portion of silver catheter broken off in the bladder, and in the other for the removal of a piece of rubber catheter said to have been broken off several months previously. In this case a stone weighing 571 grs. was removed, in the interior of which was found the foreign body.

DR. S. W. GROSS, of Philadelphia, thought that Dr. McGuire was to be congratulated on having introduced a new operation based upon the mechanism of the bladder and the physiology of micturition—the formation of an artificial urethra in a new position. The various operations which had been performed for the relief of prostatic obstruction were next referred to. The operations of Harrison, Mercier, Bartimini and McGill were considered.

DR. WM. T. BRIGGS, of Nashville, thought that perhaps, in the cases reported by Dr. McGuire, a better result might have been obtained by the lateral lithotomy provided the stone were not too large to be removed by that route, for he had noted that after incision into the prostate the gland diminished in size, and after the wound had healed a catheter could be passed in cases in which its use was before impossible. The perineal operation allows of freer drainage. Under some circumstances the suprapubic operation is a valuable one. This is especially the case where the stone is so large that removal through the perineum is liable to produce serious injury of the soft parts. It is, however, often possible, through an incision in the perineum, to so break the stone as to per-

mit its removal. Every case should be studied by itself; in some one operation is the best, in others another is most suitable. All the circumstances of the case must be taken into consideration.

MR. REGINALD HARRISON, of Liverpool, said that there are two general methods of relieving obstruction due to enlarged prostate, one by attaching the gland through the bladder, and the other through the perineum. In his operation he makes a median or a lateral incision through the perineum according to circumstances. The obstructing prostate is next divided with considerable freedom and a drainage-tube of considerable size introduced. From this operation he gets good results. Perineal lithotomy is preferable to the suprapubic operation because the lateral incision gives sufficient room for all manipulations. It gives an ample opening for the removal of a stone of considerable dimensions. It also permits of the more or less permanent drainage which these cases require. He had also, through a perineal opening, used the perineal lithotrite with success. All methods of operation should be remembered and each employed in those cases where it seems indicated.

PROF. THOMAS ANNANDALE, of Edinburgh, had come to the conclusion that if an operation is to be performed for the relief of prostatic obstruction, the perineal operation is the best. This allows of examination of the bladder, permits drainage and probably causes a diminution of the hypertrophy. It enables you to occasionally remove a portion of the enlarged prostate when this assumes a pedunculated form. The speaker exhibited a rubber tube which he had found useful in cases of Harrison's operation, when a permanent tube is required.

DR. A. VAN DERVEER, of Albany, said that the testimony presented in his paper last year was in favor of the perineal opening so far as drainage was concerned. He had employed Harrison's operation in a number of cases and the results had been such as to impress him favorably.

MR. ARTHUR DURHAM, of London, emphatically endorsed what had been said in regard to operation of stone, that no one operation is applicable to all cases. It is a great mistake to be men of one method, especially in surgery. When we hear a man say that he treats all his cases of fracture in such a way, all his cases of stone in such a way, and all his cases of prostatic disease in such a way, he may be sure that such a man has a very small practice and experience, or else is deficient of proper discrimination. In cases in which stone in the bladder is complicated with enlarged prostate, the perineal incision seems to me to be better than the supra-pubic. He described a method of performing perineal lithotomy which is performed with satisfaction at Guy's Hospital. This consists in the use of a straight

staff, the groove extending to within one-third of an inch of its extremity. A knife with a straight back is passed through the perineum until it reaches the groove, then carried along the groove to its extremity and the point of the knife being held in close contact with the staff, the two are carried forward into the bladder, thus avoiding many of the risks of the operation as ordinarily performed. In concluding he referred to the great improvement of the Bigelow operation over the old method of crushing for stone. He had no doubt that this method render both lateral and supra-pubic lithotomy much more rare than they have been in the past.

PROF. HINGSTON, of Montreal, believed that the supra-pubic operation was one to be performed only in exceptional cases. These he classified as follows: 1. In those cases of stricture in which the obstruction cannot be overcome in time to relieve the patient of great suffering. 2. In cases of prostatic obstruction. 3. In cases of tumors of the bladder which would interfere with the lateral operation. 4. In cases where the stone is too hard or too large to be removed either by lithotripsy or by lateral lithotomy. He had himself removed without injury to the soft parts, a stone weighing five ounces and five drachms.

SIR WILLIAM MACCORMAC, of London, had performed the operation of supra-cystotomy occasionally. He had never seen any untoward consequences and the operation seems to be devoid of all risk. He did not consider that drainage was necessary after this operation. The bladder empties itself freely and the drainage tube is a source of irritation.

DR. H. MCGUIRE said that the only object of his paper was to describe the two cases in which he had made an artificial urethra to relieve prostatic obstruction. The various operations referred to were not applicable to all cases, while the formation of an artificial urethra could be done in all cases. He was surprised to hear that supra-pubic cystotomy was considered dangerous. It had the advantage of avoiding some of the unpleasant consequences of the lateral operation such as dribbling of urine and impotence.

DR. J. H. PACKARD did not want to be considered as an advocate of supra-pubic cystotomy. It had, however, been shown that the dangers attributed to this operation did not exist. He considered that the operation was a valuable resource in certain cases. After this operation he had noted diminution in the size of the enlarged prostate. This he attributed to the rest afforded the bladder. It will take place in whatever way the rest may be obtained.

THE PRESIDENT, DR. D. HAYES AGNEW, being called upon, said the ground had been so thoroughly covered that there was little to be added. He agreed with those who held that no single operation was applicable to all cases. The supra-

pubic operation may be appropriate in certain cases, while in others the perineal operation is the proper one. In order to avoid the unpleasant consequences which occasionally follow the perineal operation in children where the prostate is small, I avoid the introduction of the finger into the bladder and remove the stone with forceps not much larger than the staff.

While there may be no danger in the supra-pubic operation in skilled hands, yet with the inexperienced operator there will be risk of opening the peritoneal cavity. He thought that a number of cases had been reported of rupture of the bladder following injection of the organ after dilatation of the rectum with the rubber bag.

A paper entitled *Forty Years of Chloroform and Ether, in Louisville, Ky.*, by DR. D. W. YANDELL, of Louisville, Ky., was read by title.

The following are the

OFFICERS OF THE ASSOCIATION FOR THE ENSUING YEAR:

President—Dr. D. W. Cheever, of Boston.

Vice-Presidents—Dr. T. W. Richardson, of New Orleans, and Dr. John B. Roberts, of Philadelphia.

Secretary—Dr. J. R. Weist, of Richmond, Ind.

Treasurer—Dr. P. S. Conner, of Cincinnati.

Recorder—Dr. J. Ewing Mears, of Philadelphia.

Additional Members of Council—Dr. W. F. Peck, of Davenport, and Dr. S. W. Gross, of Philadelphia.

The next meeting to be held in Washington, beginning the second Tuesday of May, 1889. Chairman of Committee of Arrangements, Dr. J. S. Billings. Member of Committee of Arrangements, Dr. J. Ford Thompson, of Washington.

THURSDAY, THIRD DAY.

DR. GEO. W. GAY, of Boston, read a paper on THE COMPARATIVE MERITS OF TRACHEOTOMY AND INTUBATION IN THE TREATMENT OF CROUP.

As to results, the conclusion was reached that the new operation saves nearly or quite as many patients as did the old.

In regard to the facility of doing intubation, it may, like tracheotomy, be easy or difficult, according to the age of the child, the condition of the larynx and the strength of the patient. Both operations are difficult in children under three or four years of age, and both are attended with some danger. In tracheotomy the risk lies principally in hæmorrhage and collapse. In intubation it lies in pushing membrane, etc., down in front of the tube, producing more or less complete obstruction. In very weak children collapse may result from prolonged efforts at placing the laryngeal tube. Under these circumstances the sur-

geon should choose the operation with which he is most familiar. The old operation can be done with one good assistant. Intubation requires at least two fairly good ones. Unless great care be taken the operator's fingers may be severely bitten, which, in at least one case, has resulted in death.

It is desirable to have a physician close at hand for three or four days after both operations. If the tube must be allowed to take care of itself, intubation is preferable. If ordinary care, such as a good nurse or other clever person can give, is available in cases located at a great distance from a physician who can place O'Dwyer's tubes, then the old operation is better, there being less danger of fatal obstruction, and the question of feeding giving less anxiety.

The weight of testimony goes to prove that it is less work to take care of intubated than of tracheotomized patients. The time occupied in caring for the tube in the latter class, is largely taken up in feeding the former class of patients.

Northrup's statistics of 107 autopsies performed at the New York Foundling Hospital, go to prove that there is no such thing as "food pneumonia," as in no instance were signs of food found in the smaller bronchi. Dr. O'Dwyer advances the opinion that the secondary lung affections, especially of pneumonia, are due to retained secretions which, owing to the pressure of the tube in either operation, can not be ejected in coughing. Others think that this complication is due to the fact that the air enters the lungs without first being warmed and moistened by passing through the nasal chambers. The author ascribes these affections to the natural tendency of exudative processes to extend in all directions, and bases the opinion upon the fact that pulmonary complications are as frequent in cases not receiving surgical treatment, run the same course and are as fatal as in those in which operation is resorted to.

While a wound in the skin is objectionable on general principles, yet the wound of tracheotomy gives little trouble and does little harm. The diphtheritic poison gains admission to the system before the wound exists, and the course of the disease as regards sépsis is the same after as before the operation. In only six of the 327 operations at the City Hospital of Boston was diphtheria in the wound noted; three of these cases recovered. Both tubes may produce ulceration in the trachea, but the result is seldom serious.

Conclusions.—1. Intubation may be tried in all cases of croup.

2. It is preferable in young children and in cases in which the tube must be left entirely to itself.

3. It may be resorted to for euthenasia, provided the operator is reasonably expert and can do it without producing collapse.

4. Tracheotomy is called for in those cases in

which intubation can not be done or in which it fails to give relief; or in which the laryngeal tube is repeatedly rejected, or requires frequent removal for cleansing. It may also be required in those cases in which sufficient food can not be given while the O'Dwyer tube is in position. It is also preferable in cases situated at a distance from a surgeon capable of introducing the laryngeal tube.

5. The tracheotomy instruments should always be at hand in intubation in case of emergency.

DR. H. H. MUDD, of St. Louis, said that intubation had been done as a precautionary measure in many cases in which tracheotomy would not have been thought of. Some of the good results of intubation are to be attributed to this fact. In most of his cases of intubation, where the patient survived he had found it necessary to resort to tracheotomy; patients had recovered after tracheotomy where intubation has proved unsuccessful.

PROF. THOS. ANNANDALE called attention to the value of the introduction of a tube through the glottis in case of operations about the throat where there was risk of suffocation or of hæmorrhage into the trachea.

DR. HUBER, of New York, had performed intubation in 94 cases with recovery in 37. He does not operate early. He considers the internal use of bichloride of mercury as of equal importance as the intubation. There is occasionally an advantage in using a small tube with the expectation that it will be coughed out, and with it a portion of the membrane, and affording an opportunity for feeding while the tube is out.

DR. T. F. PREWITT, of St. Louis, in one case of diphtheritic paralysis had, in order to avoid passage of fluid into larynx, passed a catheter through the glottis and plugged the larynx with a sponge. This permitted the fluid to go into the œsophagus without risk of entering the trachea. After feeding, the sponge and tube were removed.

DR. D. W. CHEEVER, of Boston, advocated the disuse of anæsthetics in cases of tracheotomy provided proper assistants can be secured. The operation is not accompanied with much pain. By avoiding the anæsthetic many of the risks of the operation are avoided.

DR. DEFOREST WILLARD, of Philadelphia, read a paper on

NEPHRECTOMY. 1. GUN-SHOT WOUND OF THE KIDNEY. 2. TUBERCULAR DISEASE OF THE KIDNEY.

Abdominal section was performed in the first case, but the patient died of loss of blood eighty-six hours after the injury.

In his remarks on this case Dr. Willard dwelt upon the advantages of abdominal incision, where the probabilities of other organs having been injured were so great; as hæmorrhage could be

averted, perforations repaired and escaped fluid removed. Drainage through the loin or abdomen was not advisable, provided urine had not escaped into the peritoneal cavity before the operation. The hæmatocele, if large and retroperitoneal, could not be thoroughly removed, and should therefore be allowed to remain undistended. All fluids in the abdominal cavity should be removed.

The three primary nephrectomies for gunshot wound thus far reported have all been done by Philadelphia surgeons. Keen (*Transactions American Surgical Association*, vol. v, p. 193), removed the left kidney of a girl of 18, in whom the ball had perforated the stomach, liver, spleen and kidney. This patient died on the fifteenth day. Price (*Trans. Penn. State Society*, 1888), removed the right kidney in a girl of 14, in whom the liver was also perforated. His patient recovered after multiple abscess of the liver. Dr. Willard's case died on the fourth day. In none of these cases was there anuria.

Case 2. Nephrectomy for Tubercular Kidney.—Female, æt. 32, married eight years but never pregnant. Tubercular history of ancestry uncertain. Failing in health for ten months; seven weeks ago first noticed tumor in right side of abdomen, has had increasing pain in this region, this is now very severe at times. Has emaciated rapidly. Temperature varying from 99° in the morning to 101° in the evening. Diarrhœa quite constant; passes large amounts of pus in the urine, urine $\frac{1}{6}$ albuminous, but contains no casts and no distinctive cell elements. Tumor, rounded in form, occupies the space from the right renal region forward to linea semilunaris, and vertically from lower margin of liver to line of anterior superior spinous process. Indistinct dulness extending into pelvis; resonance between liver and tumor, tumor movable.

Diagnosis uncertain as to purulent kidney or sarcoma of kidney. The size of the tumor and its projection forward determined the selection of the abdominal median incision. The right side of abdomen was found filled with thick sac, giving indistinct sense of fluctuation. From it extended downward two elongated masses, one evidently a pus-filled ureter, and the other a mass extending down from the external iliac vessels and passing under Poupart's ligament. Puncture evacuated only a few drachms of pus and did not diminish its size. Tearing open the sac, the kidney was found riddled with multiple abscesses. The vessels and the ureter low down were tied with silk ligatures and the kidney removed. The abdominal cavity was irrigated with distilled water, drainage-tubes inserted behind the uterus and into the site of the nephrectomy, and the wound closed with one set of sutures. The woman was exceedingly low during the operation, but rallied so that the temperature rose to 99° and she became perfectly conscious. Two hours after operation she suddenly sank and died.

Post-mortem examination showed that behind the suppurating kidney and in a separate sac, divided from it by a wall 3 lines in thickness, was another pus sac. This sac was 3 inches wide, and the pus had worked its way down the aorta, common iliac and iliac arteries to Poupart's ligament. If nephrectomy had been attempted this sac might have been drained and the kidney never reached at all. No hæmorrhage after operation. Death from shock. The other kidney was enlarged but not diseased.

DR. W. W. KEEN believed that blood exuded between the folds of the peritoneum was not a source of danger and that it might be left without interference. If we could make out that the kidney alone was injured the lumbar incision would be the proper one. Where there is a probability of injury of other structures the abdominal incision is the best.

DR. L. McLANE TIFFANY, of Baltimore, held that in simple gunshot wound of the kidney the proper plan was to drain the kidney through the lumbar region and not to perform nephrectomy.

DR. CHAS. T. PARKES, of Chicago, reported a case of gunshot injury of the abdomen, in which in addition to a number of perforations in the bowel the ball entered the kidney. The intestinal wounds were closed. No operative procedure was performed on the kidney. The patient died from hæmorrhage of the kidney twenty-four hours later.

DR. KEEN thought that in the condition referred to by Dr. Tiffany the proper plan was to drain, but where there is much injury of other parts the patient will stand a better chance if the wounded kidney is removed.

DR. ROBERT F. WEIR, New York: If there is simply a gunshot wound of the kidney, the organ should be thoroughly exposed in order to ascertain the extent of the injury. Then thorough drainage should be employed, and to guard against hæmorrhage the wound should be tamponed with iodoform gauze.

Obstetrical Society of Philadelphia.

Stated Meeting Thursday, September 6, 1888.

J. C. DACOSTA, M.D., IN THE CHAIR.

(Continued from p. 462.)

DR. H. A. KELLY reported

A CASE OF CÆSAREAN SECTION.

He operated April 17, of this year, delivering a living child and saving the life of the mother.

The patient a slight woman, 4 ft. 4 in. in height, had been in labor two weeks, her physician, Dr. Ireland, having watched by her bedside constantly for nine days previous to the operation. The waters ruptured four days before operation.

The estimated actual conjugate diameter was two and a quarter inches, although the pelvis was so choked by general œdema and hard cellulitis masses that it was impossible to recognize any structures with satisfaction, much less reach the presenting part of the child.

The patient's pulse at the time of operation was 142. The operation lasted thirty-five minutes. The after condition and convalescence was one of comfort and rapid recovery.

This makes the ninth case being operated on in Philadelphia, the first being by Professor Gibson in 1835, the historic case of Mrs. Reybold.

Dr. Kelly stated that he had since that time also operated upon another case for a relative indication, in preference to performing craniotomy upon a living child with the result of saving both mother and child; this question, however, of the relative indication was one of such importance, deserving such careful consideration, that he would reserve it for a more elaborately prepared paper at a future date.

DR. JOSEPH PRICE read a paper on

THE ABUSE OF CÆSAREAN SECTION.

On the legitimacy of the Cæsarean section, there cannot be now, under certain restrictions and limitations, a question. In extreme cases where hasty operation is necessary in order to save the life of the mother, where there is impaction or where there is a tumor blocking up the uterine or vaginal outlet, discussion or hesitation has little place, and he can operate best who has all resources at command and acts without hesitation.

The real points for discussion in the light necessity of the Cæsarean section, in order to terminate a labor, with greatest safety, first to the mother, then the child, are: first, "*The degree of contraction in the pelvis*;" second, "*The advancement of pregnancy*;" third, "*The chances for the induction of premature labor*." As to the first: As an epitome of the latest generally received opinion, we have the statement of Greig Smith: "The operation of Cæsarean section is said to be justifiable when the contraction is so great that we cannot expect to deliver the fœtus per naturales vias, with or without embryotomy, and save the mother. The degree of contraction is generally stated as one and one-half inches and below. But in cases in which much distortion exists, may have an upward limit of two inches."

Here then is a plain expression of conservative opinion as to the degree of deformity necessitating or justifying the operation, "As to the induction of premature labor," says Playfair, "there are few practitioners who would not deem it their duty to spare the mother the dangers of the Cæsarean section," this being especially true since "there is no amount of deformity, however great, in which we could not succeed in bringing

on miscarriage by some of the numerous means at our disposal."

The time at which premature labor should be brought on varies, of course, with the degree of deformity of the pelvis; the tables of direction have been admirably constructed by Kiwisch. Briefly, the period for induction of labor lies between the 30th and 36th weeks, and the corresponding sacro-pubic diameters vary between 2 inches and 6 lines and 3 inches and 5 or 6 lines. Here, then, naturally follows a discussion of the means for inducing premature labor. Of the many methods proposed at different times, the one seemingly the best is the soft catheter. Its introduction well into the uterus, for a distance of six or seven inches, is an almost certain means of speedily producing labor pains safely.

I consider the British rule, that Cæsarean section should never be an operation of selection, but one of necessity, in general terms, as the safeguard of puerperal women. Once establish the precedent that Cæsarean section is an elective procedure in obstetrics, and thereby lay down also the principle that abdomino-uterine section is a safer procedure than the introduction of a soft catheter into the uterus before full term, the way is laid open to every aspirant for obstetric fame, who is the fortunate possessor of a knife, to find cases for his zeal at every court and corner in the city, if perchance he can, of himself, persuade the parturient woman of the necessity of delivery by "*the new natural method of delivery*."

An axiom as to the operation is laid down by Lusk: "The precise limits at which the dangers of delivery through the pelvis rise to the level or exceed those from Cæsarean section, is not easy to determine. It depends partly upon the size and ossification of the child's head, and largely upon the experience and dexterity of the operator." The converse of this proposition is true also. The greater the experience and the more careful the observation of the operator, the less frequently will he be led to resort to Cæsarean section, if he hold in mind that it is an operation of necessity, not of election.

Two cases will illustrate the dangers here referred to, and the justness of these forebodings.

Case 1.—A woman already delivered of a living child, yet living at four years. Three other deliveries at term with the forceps. All of these children dead. No attempt at premature labor. In the fifth pregnancy she is decided upon as a case for Cæsarean section. She passes into the hands of another attendant, who, after careful pelvic measurements with a consultant, decides on premature labor. The woman delivers herself, without instruments, of a child whose head has a biparietal diameter of $3\frac{1}{4}$ inches, the period of gestation being $8\frac{1}{2}$ months. The previous measurements of the pelvis having decided upon an antero-posterior diameter of $3\frac{1}{2}$ inches.

Case 2 is an actual operation. A woman in third pregnancy. First child delivered after 30 hours' labor, with instruments, dying soon after birth. Second pregnancy, she delivered herself of a child of normal proportions, at full term, without instruments. The child yet living. Third pregnancy, Cæsarean section. Recovery after protracted convalescence; child still living. Here are lessons full of instruction. What do they teach?

DR. M. PRICE thought that the duration of labor had nothing to do with the choice of Cæsarean section. He had delivered a woman two weeks since, who had been in labor seven days. It was an occipito-posterior position, and the cervix did not dilate more than enough to permit the introduction of two fingers. He introduced his hand, dilated the os, and applied Simpson's forceps. The delivery occupied an hour and a half, but the woman made a good recovery. Had the case been delayed a few days longer there might have been a necessity for Cæsarean section. Where there is an inflammatory or œdematous condition of the pelvis, he thought there should be some forcible measure adopted for the delivery of the patient.

DR. WM. GOODELL thought that the title of Dr. Price's paper was not a fortunate one, for the gentlemen who are called upon to perform Cæsarean section are usually not the attending physicians, and they have had nothing to do with the previous medical attendance on the patient. He believed in the induction of premature labor, and would do it in preference to the performance of Cæsarean section. But often the patient herself will not submit to the induction of labor. Dr. Price would probably admit, one day, into the "Retreat," an Irish woman who has had the most frightful labor, and who had persistently refused, from conscientious motives, to permit the induction of labor. He could conceive of cases where it would be better to perform Cæsarean section, although he had never as yet done so. Probably in some of the cases in which he had formerly opened the head, he would now do Cæsarean section. He thought a woman might go on safely in labor for an indefinite time, so long as the bag of waters had not ruptured, with very little danger to herself.

DR. H. A. KELLY remarked that the bag of waters had ruptured four days before the operation. The pains had been very hard before this time, and did not change in character afterwards, although the woman soon dropped into collapse. The pelvis was so choked by hard cellutic mass that it would have been impossible to dilate anything or reach anything above the mass. The second paper evidently referred to his case performed on a relative indication, in preference to craniotomy. That case he had not yet reported, reserving it for a full careful discussion. Where

any such garbled, distorted particulars had been hunted out he did not know, nor could he reply to criticisms offered in such a tone. His profession was his life, and he came here to impart and still more to receive information in a spirit becoming the dignity of the profession, and he would not make life unhappy by taking part in any miserable bickering.

DR. J. PRICE said that in a long experience in the Obstetrical Department of the Philadelphia Dispensary he had numerous cases of deformed pelves and illy-developed women, some of them very young. He would simply call attention to two typical cases.

Case 1.—A case in which Dr. Eliot Richardson had five times done craniotomy or complete evisceration. This woman applied in her sixth pregnancy to the Philadelphia Dispensary and was assigned to Dr. Joseph Fox for induced labor—in a period of five years he had induced labor three times in this case, delivering by forceps and saving two children—one still-born.

Case 2.—Also a Dispensary case. Had in her five previous labors had the children destroyed. The sixth was provoked at eight months and two weeks, and she was delivered with forceps of a fine, large male child.

In a short experience at the Preston Retreat he had dealt with two cases of greatly contracted pelves, in both of which Dr. Goodell had twice or thrice induced labor, delivering living children. Recently two cases were sent in for induced labor or Cæsarean section. The consultants determined on the induction of labor. Both cases terminated favorably, with living children—one of them was a forceps delivery, the other normal. These are only typical cases, but few of the many he could cite in his own experience. If Dr. Kelly was satisfied that the last case given in the paper was his second Cæsarean section, he was sure he was welcome to his knowledge, as no one would wish to lay claim to it.

DR. J. PRICE exhibited a specimen of a small male foetus, at about the third month, removed from a case of extra-uterine pregnancy. Patient healthy and twice married. There had been numerous attacks of pain. Recovery from operation was rapid. The following week he did an abdominal section on a woman who was unconscious and removed an extra-uterine pregnancy. She died twenty-six hours later. This was the sixth case of extra-uterine pregnancy which had developed in his practice in four weeks. One case he went into the country to operate and found the patient dead when he arrived. Dr. Formad told him that this was a very common result in his experience as coroner's physician.

He also showed a dermoid cyst, removed from a woman who has suffered from chronic peritonitis for years. Her physician had given her as much as a grain of morphia hypodermically, and had

sat up all night etherizing her to relieve her pain. She was greatly emaciated, with a rapid, feeble pulse, high temperature, and had been in bed for six weeks. Whole tumor enucleated, no ligatures required. Intestines separated and irrigated—glass drainage. This is the 9th day and she is rapidly convalescing.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Cancer Hospital—Economy of Sanitation—Enemas of Antipyrin to render Labors Painless—Saccharin as a Preventive of Ammoniacal Urine in Cystitis—Glycerine in Suppositories—Fatal Results of Erroneous Vaccination of Sheep from Anthrax in Russia—New Antiseptic Soap.

With a view of affording a few hours diversion and entertainment to the poor sufferers of the institution, a garden party has just been held in the spacious grounds of the well known Cancer Hospital in the Fulham Road. The band of the A Division Metropolitan Police was in attendance. Out of the seventy patients at present in the hospital nearly fifty were sufficiently convalescent to leave their wards and partake of the refreshments provided for them in the grounds. The hospital which is free, was founded by Dr. Marsden in 1851, and since then has given relief to 27,131 persons afflicted with cancerous disease. It has recently undergone great extension, and is now complete and capable of receiving upwards of 100 indoor patients. During the last year the total number of new patients was 1,715.

At the annual conference of public sanitary inspectors of Great Britain held at Brighton, Dr. B. W. Richardson contended that the advance of sanitation, notwithstanding the heavy expense entailed, had brought about a general improvement in public health, as shown by the death-rates, and at the same time had been brought about by the application of the true spirit of economy. The cost of prevention was one-third the cost of disease. In many ways sanitary efforts had been impeded by over-crowding, and it was incumbent upon the public authorities to secure increased space in order to alleviate the evil. Improved school premises had done its work in reducing children's diseases, and the same causes had followed improved barrack accommodation in the army.

A German practitioner has lately stated he has succeeded in minimizing, or even preventing entirely, the pains of childbirth, by the administration of enemata of antipyrin. In the case of one woman, with her first child, who had been in great agony for upwards of twenty hours, a single

injection per anus of about half a drachm of antipyrin to a few ounces of water, the pain ceased almost immediately as if by magic, although the uterine contractions continued without alteration or diminution, and the accouchement proceeded in an entirely satisfactory manner. He also records cases where one or two antipyrin enemata rendered premature labor absolutely painless. Another authority, Dr. Layel, of Marseilles, has met with the like success, in similar cases, by the employment of this drug. Equally satisfactory results have attended the administration of antipyrin in this manner in England, and consequently it is likely to be extensively employed. If it is really the fact that in addition to its other valuable properties, antipyrin is capable of doing away with the whole, or the worst of the horrible pains of parturition, an immense impetus will be given to the demand for this already very popular medicament. Thirty to thirty-five grains (two grams) is the quantity recommended for each enema, and even in very severe cases a second or a third injection, after a short interval, suffice to relieve the patient from all her pain.

Dr. James Little, in a paper upon "the value of saccharin in preventing the decomposition of the urine in cases of chronic cystitis, states that from his results it would appear, that although saccharin exerts no very marked effect in tubercular cystitis, or in other varieties of the disease not accompanied by alkaline urine, it had been employed with very beneficial effect whenever a highly ammoniacal state of the renal excretion was present. Saccharin in fact, appeared to act by neutralizing or diminishing the amount of free ammonia in the urine, whether this arose from stricture, paralysis or prostatic disease. The ammonia being kept down or extinguished by the drug, the affection then succumbed under the ordinary treatment. Dr. Little also bears testimony to the good effects produced by full doses of caffeine, combined with salicylate of sodium, in neuralgic and migrainous headaches.

The recent discovery that the injection of a minute quantity of perfectly pure glycerine would induce an action of the bowels, has given rise to the making of a new kind of suppository by a well-known firm. The suppositories are hollow cones made to contain exactly 15 grains of pure glycerine. One is said to produce the desired action of the rectum.

The death of 5,000 sheep in Russia through being under the vaccinal treatment of Dr. Gamaleia for anthrax, seems to have been due to an incomprehensibly stupid error on the part of an assistant. For anthrax the sheep are twice inoculated, the first lymph being mild and the second and last intensive. In each case the vaccine matter consists of one-eighth of a cubic centimetre. The first produces in the sheep a vaccinal fever of one or two degrees, insufficient to

kill a guinea pig or rabbit, but fatal to mice and other small rodents. The second and more intensive injection produces also a temporary vaccinal fever after which the sheep is impervious to plague. But this second vaccine administration without the first gives a fatal result in nearly all cases. The fatal result was the natural consequence of the vaccinator—an assistant, administering the second vaccine in the first place. Usually an interim of from ten to fourteen days is allowed between the two vaccinations.

Probably no living member of the Russian faculty, old or young, has accomplished within so short a career so much hard and tedious labor as Dr. N. F. Gamaleia. He first became a disciple of M. Pasteur in the early part of 1866, since when he has worked with an enthusiastic and unremitting energy in the pursuit of tangible results in germinal diseases, at the same time personally conducting the daily inoculatory courses for hydrophobia among the large numbers of patients from all parts of Russia, Turkey and Southeastern Europe. After matriculating at the Odessa University, he proceeded to St. Petersburg, where he received his doctor's degree. His vacations he spends in Strasburg, Vienna and Paris. After some further experimental operations during the present month, Dr. Gamaleia will go to Paris and London, probably about the end of October or early in November, when, in conjunction with M. Pasteur, convincing proofs will be given of the splendid successes obtained by his laborious researches.

The Duchess of Connaught has attended a St. John's ambulance for ladies in Poona, India, and has been awarded a certificate after, it is stated, passing a very satisfactory examination.

A new antiseptic soap is coming into use in some of the London hospitals, containing from 1 to 3 per cent. of biniodide of mercury (rendered permanently soluble by the presence of a little iodide of potassium). It is found to be a more powerful antiseptic microbicide than any hitherto known.

DOMESTIC CORRESPONDENCE.

A Case of Furuncle with a Singular History.

Dear Sir:—Clark, æt. about 27 years, came to my office June 28, 1888, accompanied by his wife. After prescribing for Mrs. C., the husband called my attention to a small tumor located on the upper lip near the line of the nose, about the size of a two-cent piece, which he stated had made its appearance a few nights previous.

From its sudden development, its rapid growth, its size and color, it was evident to my mind that it was nothing more than a small blind boil, and

I therefore prescribed for him accordingly. In the course of three weeks he again made his appearance, with his upper lip disfigured by several scars, marking the location where the boil had been. He stated that, a short time after leaving my office, a physician led him to believe that the small growth was a cancer, and required immediate removal.

The report of the operation was published in a local newspaper of this town, and reads as follows: "About five weeks ago a physician brought a patient to Dr. Woodward for the removal of an epithelial cancer situated on the upper lip and quite extensive in its development. Dr. Woodward decided that the best method of removal was by electricity. In the presence of two other physicians he performed the operation successfully and without drawing a drop of blood. The operation occupied only fifteen minutes. In ten days the wound was entirely healed and the cure perfect. The patient is now perfectly well."

J. F. JENKINS, M.D.

Tecumseh, Mich., September 21, 1888.

NECROLOGY.

Mary France Thomas, M.D.

Mary France Thomas, M.D., died at her home in Richmond, Ind., of dysentery on the 19th of August, 1888, aged 72 years. Her maiden name was Myers, and she was born in Bucks County, Pa., September, 1816. While still an infant her parents moved to Washington, D. C., and in 1833 thence to New Lisbon, Ohio, where she remained until her marriage. In 1853-4 she attended medical lectures in Philadelphia, in 1854-5 in Cleveland, and in 1869-70 in Indianapolis. In 1856, she with her husband and family removed to Richmond, Ind., which has since been her home and the field of her labors.

During the war she rendered special hospital service in Washington, Nashville and elsewhere, by appointment of Gov. Morton, and for about a year she was similarly engaged in Nashville under the direction of the Christian Association. For twelve consecutive years she was physician to the Richmond Home for the Friendless, and for about eight years she gave professional attention to the poor in one district of the City and suburbs by appointment of the authorities. In 1839 she married Dr. Owen Thomas, and in November, 1848, their third and last child was born, the husband at the time being in delicate health. When this child was 3 months old she resolved to study medicine as the most available means of supporting herself, her children, and her invalid husband. Her husband was her preceptor, and without neglecting any household duty or ma-

ternal obligation she prepared herself for college, and attended lectures as recited above. To accomplish this she overcame discouragements and surmounted difficulties that would have been impossible to a less self-reliant person; sustained by a conviction that her purpose was right and her labors in the line of duty, and the inspiration of the young mother found its justification and had its reward in thirty-two years of successful professional life, the fruits of which enabled her to properly educate her children and see them honorably settled in life, and until the end sustain her invalid husband who survives. She was a working member of Wayne County Medical Society and its president in 1887; presented a number of papers to the Indiana State Medical Society from year to year; and was a member of the American Medical Association.

Beside her active life as a physician, Dr. Thomas was a member of the Woman's Christian Temperance Union; of the Order of Good Templars; of the Prohibition Club; of the Woman's Suffrage Association; of the Board of Directors of the Home for the Friendless; and of the M. E. Church, and in each and every position was thoroughly imbued with the spirit, and engaged in the labor of the situation. In every organization of which she was a member she became president and an active manager of its concerns, and beside did yeoman's service in its ranks. One can but marvel how a woman not naturally robust could do so much mental and physical work.

Possibly there may be a margin for doubt, whether or not all the conclusions Dr. Thomas reached embodied the best practical methods for the betterment of the world in the line of her labors, but to those who knew her well there remained no shadow of doubt that she, in her own way, sought diligently for the true, and when she deemed it attained wrought with zealous assiduity to make it fruitful, but under all circumstances "with charity for all and malice toward none." It was significant of the dominant traits of her character continuing to the recognized limits of life, that in making arrangements in view of her rapidly approaching demise, she named six women to act as her pall-bearers, selecting two of her co-workers in the temperance field, two of her associates in the management of Home, and two colored to make her persistent sentiments of delight at the freedom, and her desire for the culture of the race.

J. F. H.

E. Williams, M.D.

Concerning the death of this distinguished member of the profession we copy the following from a recent Cincinnati paper. We are promised a proper biographical sketch of the deceased for our columns soon.

At a meeting of the medical profession held last evening at the Miami Medical College in response to a special call to take action on the death of Dr. Williams, Dr. John A. Murphy was chosen Chairman and as Secretary Dr. Robert Sattler, who has long been associated with the deceased. The following resolutions were adopted:

The death of Dr. E. Williams, the veteran and distinguished oculist of Cincinnati, deprives the ranks of the medical profession of one of its most useful men, and the community loses also a noble and unselfish friend of humanity.

As a man, he endeared himself by his cheery and genial disposition and his unselfish characteristics to his professional colleagues, both old and young, and no one more generously received the appreciation and gratitude of his patients.

As a physician, he was equally esteemed by the profession and the community for his untiring and energetic efforts to promote the advance of medical knowledge, and, in particular, of the department of ophthalmology.

Faithfully and zealously were his best endeavors and most assiduous energy devoted to this important division of the medical sciences. For a period exceeding thirty years he was active as a specialist, and devoted all his attention and time to ophthalmology and otology. Justly does he deserve the credit and distinction of having been foremost among a limited number of men in aiding toward the introduction and establishment of ophthalmology as a recognized department of medicine and surgery in America.

Throughout this long period he has been constantly identified with medical education. His superior qualifications as a medical lecturer and teacher gave him unlimited scope of usefulness as a successful instructor, and gratefully will he be remembered by a countless number of students.

His unlimited capacity for practical work afforded him opportunities to aid in the alleviation of suffering, and, with unremitting attention, he assumed and discharged faithfully the arduous duties of a college, hospital and dispensary position. He was lavish—it may be even said reckless—in his offering to charity and poverty-stricken patients, but if he erred in giving his services gratuitously, it was only to carry out his desire to do good for the sake of good, reward or no reward.

The medical profession of Cincinnati herewith acknowledge their appreciation of Dr. E. Williams as a distinguished physician, and unite in their expression of sorrow and sympathy over the announcement of his death.

JOHN A. MURPHY,

W. W. SEELEY,

S. C. AYRES,

W. H. TAYLOR,

ROBERT SATTLER.

The faculty of Miami Medical College met last evening and adopted similar resolutions.

MISCELLANEOUS.

THE PEOPLE'S FOOD QUESTION IN SWITZERLAND.—The Swiss Society for the Promotion of the Public Good has addressed to all the Working Men's Clubs, Mutual Coöperation Unions, and Agricultural Laborers' Associations throughout the Confederacy, a circular inviting their support in the work of improving and cheapening the alimentation of the people. An important advance in this direction might, the Society urges, be made by the extension of the use of milk and cheese as articles of consumption. Strange as it may appear, such food—so satisfying, so sustaining, and, if properly produced, so accessible to the very humblest—has yet to be made the subject of special recommendation to the comparatively well educated, undoubtedly intelligent, and industrious Swiss. Yet such is the case; and accordingly we read of an appeal to all branches of the above Society "to arouse in the popular mind an interest in the matter, as well as to open up the ways and means of extending the consumption of milk and cheese." For the furtherance of this object, proceeds the circular, "the local branches are requested to establish courses of culinary and household instruction (*Koch und Haushaltungskurse*), with immediate reference to the wants and circumstances of the laboring classes. For the conducting of such courses the pupils of the culinary school at Reussport, near Lucerne, are qualified and licensed. As has been done in the Canton Aargau, these branches can, in all the cantonal villages, establish dépôts for the supply of genuine milk and unadulterated cheese, and, in cases where during the winter they furnish the poorer children living at a distance from the school with the midday meal, they can make the said meal consist mainly of milk and cheese with bread." The agricultural branches of the Society are reminded that they are in a position to exert a salutary influence on cheese-production, and especially to diffuse the making of its household varieties, which has recently been brought so near perfection. To the artisan branches, on the other hand, appeal is made to promote the consumption of cheese by rendering it as accessible as possible, and moreover, in the interests of their respective *clientèles*, to see to the purity of the milk concurrently supplied. This Swiss movement is one to which sanitarians nearer home might well give attention, and its results should be watched and noted by all who realize the daily increasing urgency of the popular food supply in all countries.—*The Lancet*, September 22, 1888.

HEALTH IN MICHIGAN FOR SEPTEMBER, 1888.—For the month of September, 1888, compared with the preceding month, the reports indicate that remittent fever, bronchitis and influenza increased, and that neuralgia, cholera morbus, cholera infantum, consumption of lungs and erysipelas decreased in prevalence.

Compared with the preceding month the temperature in the month of September, 1888, was much lower, the absolute humidity and the day and night ozone were less, and the relative humidity was slightly more.

Compared with the average for the month of August in the nine years, 1879-1887, intermittent fever, typhomalarial fever, consumption of lungs, tonsillitis, whooping-cough, diphtheria, neuralgia and cholera infantum was less prevalent in September, 1888.

For the month of September, 1888, compared with the average of corresponding months in the nine years 1879-1887, the temperature was lower, the absolute and relative humidity and the day ozone were less, and the night ozone was much less.

Including reports by regular observers and others, diphtheria was reported present at twenty places in Michigan in September, 1888, scarlet fever at twenty-four places, typhoid fever at thirty-five places, and measles at seven places.

Reports from all sources show diphtheria at seven places less, scarlet fever at one place less, typhoid fever at seven places more, and measles at the same number of places in the month of September, 1888, than in the preceding month.

FOUR CHILDREN AT A BIRTH.—DR. PARK P. BRENE-MAN reports, in the *Australasian Medical Gazette*, of August, the case of a woman in Sydney, N. S. W., who gave birth last April to four children at one birth. The children, with the exception of the fourth, were expelled head first; the fourth was born feet first. The labor was very short, there being but thirty minutes from the time the first child was born to the completion of the labor; ten minutes between each child. The children were all born alive, and lived from two to six hours and a half. They were as large as the average $5\frac{1}{2}$ months' child, perfectly formed, and well nourished.

ADULTERATED MILK.—A dairyman near Melbourne was recently fined \$25 and \$15 costs for having sold milk containing from 9 to 12 per cent. of added water, and deficient in butter fat 23 per cent.

DR. WILHELM BIEDERMANN, of Prague, has accepted the chair of Physiology in Jena, vacated by the resignation of Professor Preyer.

THE INTERCOLONIAL MEDICAL CONGRESS of Australasia will be held in Melbourne in January, 1889.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from September 29, 1888, to October 5, 1888.

Major Henry M. Cronkhite, Surgeon, on being relieved by Capt. Corbusier, will report for duty to the commanding officer, Little Rock Bks., Ark., reporting by letter to the commanding General Div. of the Atlantic. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

Capt. George W. Adair, Asst. Surgeon, is relieved from duty at Ft. Brady, Mich., and will report for duty to the commanding officer, Ft. Robinson, Neb., reporting by letter to the commanding General Dept. of the Platte. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

Capt. William H. Corbusier, Asst. Surgeon, on being relieved by Capt. Taylor, will report in person to the commanding officer, Ft. Hays, Kan., for duty at that post, relieving Major Henry M. Cronkhite, Surgeon, and reporting by letter to the commanding General Dept. of Ariz. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

Capt. Arthur W. Taylor, Asst. Surgeon, is relieved from duty at Ft. Robinson, Neb., and will report in person, without delay, to the commanding officer, Ft. Grant, Ariz. Ter., for duty at that post, relieving Capt. William H. Corbusier, Asst. Surgeon, and reporting by letter to the commanding General Dept. of Ariz. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

By direction of the acting Secretary of War, the following named officers of the Medical Department will report in person, on October 9, 1888, to the President of the Army Medical Examining Board, Army Building, New York City, for examination for promotion: Capt. Benjamin Munday, Asst. Surgeon; Capt. William O. Owen, Jr., Asst. Surgeon. Upon the completion of their examination to rejoin their stations. Par. 15, S. O. 225, A. G. O., Washington, September 27, 1888.

Lieut. Ogden Rafferty, Asst. Surgeon U. S. Army, will stand relieved from duty in connection with the Division rifle competition, the 7th inst., and under par. 6, S. O. 2, c. s., Hdqrs. Div. of the Missouri, will return to his proper station, Ft. Clark, Tex. Par. 5, S. O. 95, Hdqrs. Dept. of Texas.

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ORIGINAL ARTICLES.

THE EVOLUTION OF THE CYSTIC KIDNEY.

Read in the Section on Practical Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May 8, 1888.

BY I. N. DANFORTH, A.M., M.D.,
OF CHICAGO, ILL.

Synonyms:—Sacculated Kidney, Surgical Kidney, Pyonephrosis, Hydronephrosis

By "Cystic Kidney" I mean that condition of the organ in which it is more or less completely converted into a number of cavities, each cavity containing a fluid or semi-fluid matter, and possibly solid matter as well. The number of these cavities varies greatly, sometimes being limited to half a dozen or even less, sometimes reaching several hundreds. The size of the cystic kidney varies greatly: sometimes it is not enlarged at all; at other times it is enlarged to two or three times its normal dimensions.

The term "Evolution," although adopted as the title of this paper on the spur of the moment, seems to describe what occurs in renal cystogenesis most admirably, since it is really an "unrolling" or "unfolding" of the renal structure, as it slowly yields to the pressure of the fluid accumulating in the cysts.

It is the purpose of this paper to classify the causes of cystic kidney, and to briefly describe the mechanism by which each one produces its result. Of course in attempting to treat so large a subject within the time allotted to papers before this section much of detail must be omitted, but I think the essential facts can be stated without trespassing too much on your patience.

I think the causes of cystic or sacculated kidney may be classified as follows:

1. *Diathetic Causes*—with these varieties:

- a. Excess of saline elements of the urine.
- b. Tuberculosis.
- c. Carcinoma.

2. *Congenital Causes.*

- a. Floating kidney, with consequent twist of ureter.
- b. Congenital Hydronephrosis.
- c. Congenital degeneration of Glomeruli.

3. *Mechanical Obstruction* consequent upon disease of pelvic organs.

4. *Traumatic Causes.*

5. *Pathogenic Cysts.*

a. Dermoid.

b. Hydatid.

c. Cystic Metamorphosis.

1. Cystic kidney produced by "diathetic causes." By far the greater number of cystic or surgical kidneys occur during the active period of life, when the peculiar "diatheses" which lead to them are most likely to manifest themselves, and this is peculiarly true of the first group of cases—those produced by:

a. An "excess of the saline elements of the urine." In clinical experience we find that the "lithic acid" and the "phosphatic" diatheses are those which are most prolific of renal lesions, and their *modus operandi* is substantially the same. It is very easily explained. When assimilation and tissue waste are carried on in physiological proportion to each other—provided retrograde metamorphosis takes place in accordance with physiological laws—the urine is never "saturated" with solid matter, and no precipitation can take place in the renal tubules; but unfortunately these conditions do not always obtain. Certain grave departures from the normal course of assimilation and disassimilation occur, whereof the consequence is the super-saturation of the urine with saline elements. When this happens there can be but one result, namely, the saline elements, which are in greater excess, are precipitated within the lumen of the tubuli uriniferi, and mechanical obstruction of the invaded tubule follows. At first but a few particles of the given salt are thrown down, but these being angular or spiculate, easily insinuate themselves between the angles of the epithelial cells and thus become fixed at their point of lodgment. Two results now follow:

First, the foreign body, the saline particle, acts as a local irritant to the epithelial cells of the tubule, and they respond by entering into that pathological condition which we know as "cloudy swelling," which means that they enlarge and also that they throw off a glutinous secretion, which materially aids in obstructing the tubule; secondly, that the primary granule or crystal acts

as a point of attraction for other crystals, and thus a minute intra-tubal calculus is speedily formed. The tubule is now effectually occluded, but if the occlusion takes place below the convoluted portion, secretion of urine still goes on; meantime the tubule becomes inflamed, and then dilated, until a small cavity is excavated, which is filled by pus and urine, and the process of developing a multitude of similar cavities through the agency of similar causes goes on uninterruptedly, until the organ consists only of a series of cavities or excavations, from the size of a pin's head to that of a walnut, and we have the so-called "cystic" or "surgical" kidney. The calculi are not necessarily retained in the renal tubules; in point of fact, they are in most cases forced out of the tubules by the pressure of the urine accumulating above them, but not until the process of dilatation is well advanced, and the structure of the tubule is materially changed—so changed, indeed, that recovery is impossible. On the other hand, the calculi are not infrequently retained in the tubules, where they grow by accretion, until they acquire dimensions sufficient to produce deep-seated constant pain by their encroachments upon the renal tissues. In such cases the pressure of the calculi occludes many tubuli, and the result is at first a "multilocular" cyst, but later a single large cyst or cavity, because the intervening cyst walls are gradually broken down. Of late years many such cases have been radically cured by "nephrolithotomy," an operation which Henry Morris, of London, has done so much to establish.

b. "Tuberculous Kidney." Tuberculous disease of the kidney does not often occur, as a primary disease, although those who are much in the dead houses of our hospitals find occasional specimens. But whether the deposit be primary or secondary, its behavior is substantially the same. The tuberculous deposit is most common in the cortex, and generally each deposit clusters around some arterial twig. The artery thus isolated is gradually encroached upon, until its lumen is obliterated, and the blood supply of a small area is nearly or quite cut off. Hence, rapid disintegration of the involved tissue takes place, and the retrograde changes in the tubercle itself are hastened thereby. But meantime, the outlying connective tissue, true to its own instincts, has gradually increased, and has formed an impenetrable lateral wall against the escape of the softened and semi-liquid tubercle. There is now but one avenue of escape, namely, between the straight tubes which form the medulla, and project, as "papillæ" into the pelvis of the kidney. If the contents of the tuberculous cyst escape in this direction, we are likely to have a cone-shaped cyst, with the apex of the cone pointing towards the renal pelvis. But if the tuberculous matter remains imprisoned within

the cavity environed by the pathological connective tissue, we shall find a "cyst" or walled cavity filled with a putty-like or mortar-like material, which consists of tubercle corpuscles, pus cells, renal debris, and a sandy or gravelly "gritty" material, which represents the precipitated saline elements of the urine. Occasionally resorption of the liquefied contents of the cavity takes place, a solid matter remaining, perhaps to be subsequently mistaken for a true renal calculus, which of course it cannot properly be called.

c. "Carcinoma." In the adult, carcinoma of the kidney is almost never primary, and it is a well-known clinical fact that secondary manifestations of renal cancer are by no means common. Moreover, when secondary cancer of the kidney does occur, it is not generally followed by cystic degeneration; nevertheless this does occasionally happen, and in the following manner.

Cancerous deposits in the kidney occur sometimes as infiltrations, sometimes as rounded nodular deposits. In the latter case, each nodule is shortly surrounded and isolated by a fibrous capsule composed of hypertrophied connective tissue. By this process, the cancerous nodule is gradually shut off from its blood supply to an extent at least sufficient to induce early and rapid retrograde changes, particularly fatty or mucoid degeneration. Hence, the solid cancerous nodule becomes transformed into a soft pultaceous mass, or even into a dirty yellow or grayish fluid. This generally finds its way into the pelvis of the kidney, and thence into the bladder. It sometimes happens that our first intimation of renal cancer comes from a profuse discharge of purulent or bloody matter per urethram, which signalizes the fact that a cancerous nodule has undergone degeneration, and then "tunnelled" its way to the renal pelvis, whence its escape is direct and easy. It must (of course) be apparent, that each cancerous nodule which degenerates and escapes in the manner indicated, will leave a vacant cavity, or "cyst," and that the number of such "cysts" is equalled by the number of broken down nodules. Primary cancer of the kidney is a disease peculiar to childhood, "before the fourth or fifth year" [Morris.] It is almost always of the encephaloid type, and sometimes attains enormous proportions. I have seen one case in which the cancerous deposit distended the abdomen to an almost incredible degree, while the alimentary canal, the liver, and other abdominal organs were compressed and crowded so as to be hardly recognizable. In this case there were numerous cystic cavities with fluid contents of a dirty gray color, which were probably produced by the breaking down of isolated cancerous masses in the manner, and for the reasons already set forth. It must be admitted, however, that cystic excavations in cancerous kidneys are rare as compared with such excavations from

other causes; yet they have occurred, and doubtless will occur again; hence they merit a recognition in our text-books and lecture rooms.

2. "Cystic Kidney produced by Congenital Causes."

a. Migratory kidney with consequent "twist," or doubling of the ureter. I use the term migratory kidney advisedly, intending thereby to include both the "movable kidney" and the "floating kidney," whereof the anatomical and pathological distinctions are now well understood, and it is not necessary to discuss them here. Nor does it concern us particularly whether we are dealing with "movable" or "floating" kidney, since they are both, and about equally, subject to the accidents which result in a distended or sacculated kidney. The liability of the ureter to become twisted or doubled depends very much upon the range and movement which the kidney possesses. If the renal pedicle is short, and the kidney is confined in the post-peritoneal ileo-lumbar space, the danger is quite insignificant, although it does, even then, exist; on the other hand, if the pedicle is long and the organ is situated between the peritoneal folds which are known as the "mesonephron," the range of movement must necessarily be extensive, and the danger of ureteral obstruction must be much greater. There are two methods in which stenosis of the ureter may occur in "migratory kidney." First, "when the kidney drops forwards or downwards, as after long standing or sitting, the course of the ureter becomes so deflected and curved upon itself that the urine cannot flow along it." [Morris.]

A moment's reflection will make this clear. When the kidney "drops downward or forward," so as to bring the pedicle "taut," the ureter is made to describe an acute angle which has the effect of collapsing it, and producing more or less complete temporary occlusion. Meantime the secretion of urine goes on, the proximal portion of the ureter and the renal pelvis are in turn distended, the papillæ are pushed back and flattened, the calices are dilated, and the process of the "evolution" of the cystic kidney is fairly under way. But in a short time, owing to changes in the position of the body, or manipulation by the patient or his surgeon, or possibly by the distending force of the accumulating urine, the kidney is replaced, the ureter is rendered pervious again, and the accumulated urine disappears. Sooner or later the same series of events occurs again and again, each period of occlusion adding to the renal dilatation already existing, until the kidney is literally converted into a globular cyst, sometimes quite distinctly lobulated. Such cases used to be mistaken for ovarian tumors, but owing to our general increase of knowledge regarding abdominal tumors and their diagnosis, it is not likely to occur again. The twisted ureter acts in a precisely similar way, ex-

cept that the dilatation of the kidney goes on quite slowly, because the twist is generally no more than is accomplished by half a revolution of the kidney, and is therefore more frequently amenable to spontaneous restoration than the collapsed ureter above described. It is a clinical fact that nearly every migratory kidney is found more or less dilated when the organ is examined post-mortem, and that many an abdominal tumor which was a source of perplexity to the patient and her medical advisers, has been thus explained. I think a dilated migratory kidney is more likely to turn out a hydronephrosis than a pyonephrosis—at least such has been my own observation. I am quite well aware of the fact that the movable kidney is not always congenital, but, entertaining the opinion that the exceptions are exceedingly rare, I think I am fully warranted in including this class of cases among those of congenital origin.

b. "Congenital Hydronephrosis." This rare and singular form of renal lesion is so seldom seen, that but few of us can speak of it from experience. Yet it must be recognized as one of the causes of cystic kidney. It depends upon some malformation of the kidney or its appendages. As Morris and Dickenson observe, in the majority of cases, both kidneys are involved, and the cause lies in some fault at the cystic outlet of the ureter. But this is not always the case, since unilateral hydronephrosis is well-known among the surgeons, and several cases are recorded. The malformation which produces hydronephrosis may be at the pelvic extremity of the ureter, as when a valve-like fold of membrane closes the pelvic orifice of the ureter; or by some abnormality of the ureter itself—an obliquity, contraction, or arrest of development; or by occlusion, partial or complete, of the cystic orifice of the ureter. Or some abnormality of the renal vessels in consequence of which the ureter is compressed, may be the apparent cause. When both kidneys are involved of course an immediately fatal result must be the consequence; but when the disease is unilateral, the child is in no immediate danger. I have now a case of unilateral hydronephrosis under my care, the patient being an otherwise healthy boy 20 months old. The tumor occupies a large part of the abdominal area, and is so hard as to suggest a tumor with solid contents, instead of a hydronephrosis. Nevertheless, several weeks ago, when he was first presented at my clinic at St. Lukes Hospital, I drew off 40 ounces of urine by aspiration, using strict antiseptic precautions; but the cyst rapidly filled again, and in a week or ten days seemed as large as ever.

c. "General Congenital Cystic Degeneration." At rare intervals an infant is born or is instrumentally delivered with an enormously distended abdomen, due to the fact that the kidney has

been converted into a "congeries of cysts," a process of general cystic degeneration. Such a case is recorded in the *Medical Record*, for Jan. 21, 1888, and a few similar cases are on record. They are regarded, and probably correctly, as a peculiar form of cystic degeneration of malpighian bodies, but occasionally the convoluted tubules appear to be involved. In other words, the functional or potential portions of the kidneys only seem liable to this form of degeneration, and even then the process probably begins during intra-uterine life. The results are that the kidney is converted into a vast number of cysts, varying in size from those almost too small to be seen by the naked eye up to those as large as a hazelnut; that by the growth of these cysts and their progressive distension the kidney is greatly enlarged, and the abdomen greatly distended. The disease usually invades both kidneys, and is frequently associated with similar degeneration of other organs.

3. "Cystic Disease of the Kidney Produced by Mechanical Obstruction Consequent upon Disease of the Pelvic Organs."

a. Diseases of the bladder. Any form of cystic disease which produces thickening of its wall or intra-mural infiltration, so as to partially occlude the orifice of the ureters, is capable of inducing cystic kidney. And the cystic orifice of the ureter is very easily rendered impervious. It will be remembered that the ureter before opening into the bladder, passes for some distance between the walls thereof; hence the cystic orifice of the ureter is diagonal or valvular, an arrangement which retains the urine in the bladder when once it has arrived there. But when the bladder is thickened and corrugated by inflammation, or invaded by morbid growths, the cystic orifice of the ureter is more or less completely closed by pressure, and the entrance of urine rendered difficult and nearly impossible. Under these circumstances the ureter, the pelvis of the kidney, and finally the kidney itself, yield to the distending force of the retained urine, and a retention cyst, often of enormous dimensions, is the result. The diseases of the bladder most likely to produce cystic kidney are inflammation, carcinoma, sarcoma and tuberculosis.

b. Diseases of the uterus and its appendages. I have lately seen a case of double hydronephrosis in a woman almost 40 years of age, whereof the only discoverable cause was a compression of the ureters by a much enlarged and prolapsed uterus. The cervix uteri was enormously hypertrophied, tilted up against the bladder and fixed in this position by adhesions, so that the ureters were constantly although not severely compressed thereby. The consequence was a partial retention of the urine in the renal pelvis, and the slow but gradual extinction of the kidney, until nothing of the renal structure remained except a thin layer of cortical structure just beneath the thickened capsule.

Malignant disease of the uterus not infrequently produces cystic distension of the kidney; tumors of the broad ligament generally cause more or less complete stenosis of the corresponding ureter; ovarian fibroids have been known to produce the same consequences, and pelvic cellulitis, especially when followed by extensive suppuration, is very likely to be followed by gradual closure of one or both ureters, and its inevitable results. In short, any pelvic disease which is followed by pathological new formations, or the dislocation of the pelvic organs, may produce compression of the ureter and cystic kidney.

4. Traumatic Causes. The traumatic causes of cystic kidney cannot be formally classified. Any injury of the kidney may result in cystic disease—but how and why we cannot always explain. For example, I have lately seen the case of a young man who fell down a rough and precipitous hillside, thereby receiving a severe injury of the right kidney, which was followed by pain, tenderness and hæmaturia. These symptoms shortly subsided and the patient regarded himself as quite well. Yet the kidney remained slightly tender; he had occasional but not severe attacks of nephralgia; and four years after the injury he died after nephrotomy, the kidney being an enormous multiple abscess. I have seen several cases of cystic kidney attributable to traumatic causes, although it is impossible to explain how an injury to an organ should set in operation that train of pathological events which result in a multiple cyst. This fact we must recognize in all its pathological, diagnostic and therapeutic bearings.

5. "Pathogenic Cysts."

a. "Dermoid Cysts." The dermoid cyst, so far as I am aware, has never been found in the human kidney. It has without doubt occurred. They have repeatedly been found in the kidneys of the lower mammalia, and there is no reason why they should not be found in man. On the other hand, reasoning from the standpoint of analogy, and having due regard for the teachings of the laws of pathology, so far as we understand them, we have every reason to believe that the dermoid cyst has invaded the human kidney and will do so again. Therefore I am of the belief that the dermoid cyst ought to be regarded as one of the forms of disease to which the kidney is liable, in spite of the fact that the opinion cannot yet be authenticated by experience.

b. "Hydatids." In the language of Roberts, "Hydatids of the kidney are comparatively rare; they are much less common than hydatids in the liver, and even in the lungs; but they are more frequent than hydatids in the other organs and tissues of the body." These cysts pursue in the kidney precisely the same course that they do in other organs, except the intestinal canal. That is, they become filled with echinococci by continuous endogenous development until a parent cyst of

large, and sometimes enormous proportions, is the result. But the echinococci never advance beyond the first stage of development, and their reproduction may be arrested; hence it follows that an hydatid cyst may remain in the kidney for years without exciting any pronounced symptoms, or involving their host in any imminent danger.

c. "General Cystic Metamorphosis." Although this is a rare form of disease, nearly all recent writers describe it and produce illustrative cases. The kidney—or generally both kidneys—are enlarged and transformed into a multitude of cysts, which range "from the size of a pin's head to that of an orange." (Roberts.) They contain a reddish or yellow limpid fluid, which is always highly albuminous, and contains epithelial cells much changed and degenerated by maceration. According to the best observations of the best observers, they are derived both from altered and degenerated malpighian bodies, and altered and degenerated segments of convoluted tubes.

The cause of this peculiar analogue of the congenital cystic kidney is but little understood, but it is probably of the nature of collagenous degeneration of the renal cells.

In conclusion, I have to express my regret that so much remains to be learned concerning cystic disease in general, and of the renal cysts in particular, and to add the hope that in the near future our knowledge will be more definite and accurate upon this as upon all other subjects which interest the working pathologist.

ABSTRACTS OF CONTRIBUTIONS TO TERATOLOGY.

DEFINITION OF TERATOLOGY. GIANTS AND DWARFS. CLASSIFICATION OF MONSTROSITIES. FOUR-LEGGED CHILD,

J. MYRTLE CORBAN. SIAMSE TWINS. HUNGARIAN SISTERS. SOUTHERN NIGHTINGALE.

SOUTH CAROLINA TWINS, MILLIE AND

CHRISTINE. JOHN ALLEN. HER-

MAPHRODITISM. MISS EMILY

LAUNDRY, THE LOUISIANA

BEARDED GIRL.

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DEFINITION OF TERATOLOGY.

The word Teratology, which we owe to Geofrey St. Hillaire, literally means the *Science of Monsters*, and in the present article we shall apply the term to the *doctrine of congenital deformities*. Teratology, in a scientific sense, constitutes a part of *Pathological Anatomy*, which comprises all the anomalies of the organization; those which occur during *intra-uterine* life are called *congenital*, and those which arise during *extra-uterine* life, *acquired*. What are commonly called *monsters* are most generally referable to the former; that, is to the imperfections of the primitive formation.

Teratology, therefore, as a department of Morphological Science treats of the deviations from the normal development of the embryo.

The term *embryo* is commonly limited in human anatomy to the ovum in the first three months of its *intra-uterine* life, in which it is still developing or acquiring the rudiments of its form; the term *fetus* being applied to it in the subsequent months during which the organism grows in the lines of development already laid down.

It is mostly in the first, or embryonic, period that these deviations from the normal life occur, which present themselves as monstrosities at the time of birth.

CLASSIFICATION OF MONSTROSITIES.

The most usual grouping originally suggested by Buffon (1800) is into *Monstra per excessum* and *Monstra per defectum*, and *Monstra per fabricam alienum*. But some writers have placed the more simple cases of excess and defect side by side, and separate the double monsters from the single; the theory of the former being a distinct chapter in Teratology.

The origin of monstrosities has been referred to two main causes:

1. To the original malformation of the germ.
2. To the subsequent deformation of the embryo by causes operating on its development.

It is evident that giants and dwarfs are not referable to the action of these causes, because in both forms of monstrosity nothing peculiar may be noticed at birth. The infant of the future giant may be small and well-proportioned, and that of the dwarf large and well-proportioned.

CAUSES OF CONGENITAL ANOMALIES.

1. Original malformation of the germ.
2. Deformation of the originally well-formed germ.
3. Diseases of the ovum and foetus.
4. Imperfect development of the foetus from some remote or unknown cause.

CLASSIFICATION OF MONSTROSITIES.

- i. Malformation of the ovum.
 - (a). Molabostyoides.
 - (b). Separation of the placenta into lobes or cotyledons.
 - (c). The vesicles of the umbilical cord are separated near the placenta, and meet at a considerable distance from it.
 - (d). The umbilical cord too long.
 - (e). The umbilical cord too short.
 - (f). Absence of one of the umbilical arteries.
 - (g). Increased number of the vesicles of the cord.
 - (h). Persistence of the umbilical vesicle.
 - (i). Constriction of the umbilical cord.
 - (j). Umbilical cord too thick.

MALFORMATION OF THE FŒTUS.

- (A) Monstrosities produced by the arrest of development.

1. Non-closure of the anterior parts of the body: (a) fissure of the whole anterior wall of the body; (b) fissure of the thorax; (c) fissure of the anterior abdominal wall; (d) fissure of the pubic and hypergastric regions; (e) cervical fissure; (f) fissure of the face.

2. Fissure of the skull: (a) want of the brain and exposure of the whole basis of the skull; (b) the denuded surface of the *basis cranii*, occupied by a spongy substance instead of brain; (c) the surface of the *basis cranii* only partially denuded, a spongy tumor occupying the place of the brain; (d) the skull flat, but having an opening through which the brain protrudes, as a hernia.

3. Fissure of the back part of the body; (a) Hydrorrhachis, and spina-bifida.

4. Hydrocephalus congenitus.

5. Acephalæ, or foetus without a head.

6. Want and defective formation of the trunk—acomia.

7. Defective formation of the extremities.

8. Cyclopia.

9. Deficiency of the lower jaw—monoia.

B. MONSTROSITIES PRODUCED BY AN EXCESS OF DEVELOPMENT.

1. Foetus in foetu.

2. Double monsters—heteradelpha.

3. Double monsters; (a) anterior duplicity; (b) lateral duplicity; (c) inferior duplicity; (d) posterior duplicity; (e) superior duplicity.

4. Triple monsters.

FOUR-LEGGED CHILD, J. MYRTLE CORBAN.

One of the most remarkable instances of monstrosity which has come under my observation is that of the four-legged child (infant), J. Myrtle Corban, examined by the late Professor Paul F. Eve and the writer, in Nashville, Tenn., June 16, 1868.

The following, Figure No. 1, represents the appearance of this monstrosity.



FIGURE 1.—Four-legged female infant, J. Myrtle Corban, from photograph taken in Nashville, Tenn., June 16, 1868, about twenty years ago.

The following description of the infant, J. Myrtle Corban, was prepared jointly by the late Professor Paul F. Eve and myself, June 16, 1868.

INVESTIGATION OF THE FOUR-LEGGED CHILD, J. MYRTLE CORBAN.

Nashville, Tenn., June 16, 1868.—The undersigned, in response to the request of a number of physicians and the relatives and friends of the unfortunate subject of this investigation, give the following testimony: The infant, J. Myrtle Corban, has four legs and two distinct external female organs of generation, with two external openings of the urethra and two external openings of the double rectum. The external genito-urinary organs are as distinct as if they belonged to two separate human beings. The fæces and urine are passed (most generally simultaneously, particularly the urine), from both external urinary and intestinal openings, situated respectively between the left and right pairs of legs.

The head and trunk are those of a living, well-developed, healthy, active infant of about five weeks, whilst the lower portion of the body is divided into the members of two distinct individuals, near the junction of the spinal column with the *os sacrum*. As far as our examination could be prosecuted in the living child, we are led to the belief that the lower portion of the spinal column is divided or cleft, and that there are *two pelvic arches supporting the four limbs*, which are situated upon the same plane.

Photographs of this infant have been made by the advice and under the supervision of one of our number.

The reality in this case surpasses expectation, and we are of the opinion that this interesting *living monstrosity* exceeds in its curious manifestation of the powers of nature in abnormal productions, the celebrated "Siamese Twins."

JOSEPH JONES, M.D.,

Prof. of Phys. and Path., University of Nashville.

PAUL F. EVE, M.D.,

Prof. of Surgery, University of Nashville.

FURTHER REMARKS BY PROFESSORS JONES AND EVE.

Josephine Myrtle is the third offspring of W. H. and Nancy Corban, aged 25 and 34, the wife being the senior by nine years. They are so much alike in appearance, having red hair, blue eyes and very fair complexion, as to produce the impression of their being blood kin, which, however, is not the case. Mrs. Corban is from North Alabama, had borne one child to a former husband, the child having dark coloring, and resembling mostly the father, who had black hair and eyes. Her three children are all girls, the one already alluded to, now 6 years old, another 3, and this *infant monstrosity*, now to be more minutely described, born the 12th of May, 1868, in Lincoln county, Tennessee, five weeks ago.

Mr. Corban is a Georgian, served in the Confederate army through the war, and was severely wounded in the right arm and left hand. The parents are in fair health, though the mother is *anæmic*. She recollects no fright or disturbance during her last pregnancy. The presentation was fortunately the head, which accounts for the preservation of the life of the child. It would be curious to speculate on the trouble which might have been produced had the feet or breach presented, while the result, in all probability, would have proved fatal to the infant, and possibly to the mother. Mrs. Corban says that there was nothing peculiar in the labor or delivery. When three weeks old the child weighed ten pounds. It now nurses healthily, is thriving well, and we saw it urinate simultaneously, between the *two pairs of labia of the two vaginae*, situated about six inches apart. From the crown of the head to the *umbilicus* measures twelve inches, and from this point to the toes of the right and left external feet, eleven inches. From the *umbilicus* up all is natural and well-formed; all below this extraordinary and unnatural. An inch below the navel is a mark of an apparent failure for a second one. There are four distinct pretty well developed lower extremities. They exist in pairs on both sides of the median line which resembles the cleft of an ordinary pair of legs; but here there are no marks whatever of *anus* or *genital* organs, and upon pressure we discover no *os coccygis* or *sacrum*. The outer legs of both sides are the most natural of the four (though the foot of the right one is clubbed), but are widely separated by the two supernumerary ones, which are less developed, except at their junction with the body, from which they taper to the feet and toes more diminutive, and which are turned inwards. One toe is bifid on the left extra inward extremity. At birth these extra legs were folded flat upon the abdomen. We are led to believe that there are *two uteri as well as two recti*; in fact that the pelvic organs are double. Of course a minute dissection would alone expose the true condition of these parts.

Should this infant reach maturity and the internal generative organs be double, there is nothing to prevent conception on both sides. The first difficulty will, however, be in her walking. The outer, or external legs, may be used for progression; the inner, or intumed ones, probably never. These might be successfully amputated at the knees, or higher up.

One of us recollects being in London, in January, 1830, at an exhibition of the Siamese Twins, when Sir Astley Cooper gave an opinion adverse to an operation with a view to separate them, but which has always appeared to us feasible and without much risk of *peritonitis*; an operation, too, which should undoubtedly be performed in case of the death of one of them, for no medical man believes in the vulgar impression that they

must die simultaneously. In the present case all surgical interference, is of course, out of the question, except that alluded to—removal of the extra legs.

Cases somewhat similar to the above have occurred and been described. Rokitsansky refers to two completely distinct bodies conjoined at their *ossa sacra* or *coccyges*, as in the well-known Hungarian sisters, Helena and Judith, born in 1701, who survived their twenty-second year.

Geoffrey St. Hilaire alludes to cases of a trunk with two heads, some even Janus-like, having four upper and four lower extremities.

The case, however, recalled most vividly by Josephine Myrtle, is that of Rita-Christina, well-known in Europe, and accurately described in this country years ago by Prof. Meigs. In this wonderful instance there were two heads, two necks, four arms, but only two legs; and was thus the reverse of our case. From the *umbilicus* down there was one well-formed child, but above this all the organs were double; in reality there existed two beings. The rectum and bladder were common to both, but all else in the trunk was double and distinct. One would sleep while the other played, etc., for they had *two spinal marrows, two brains, two hearts*, but the last two occupied a common *pericardium*. Unfortunately, after surviving a little over a year, one sickened and died, when the other, then in health, instantly expired.

Rita and Christina were born in Sardinia, 1829, and described by Dr. De Michaelis, Professor of Surgery in the Royal University of Sassari, and lived eighteen months.

The late Prof. J. C. Warren, of Boston, first described the Siamese twins brothers, when purchased of their mother by Capt. Coffin and Mr. Hunter (joint owners), and brought to that city, in 1829.

The infant J. Myrtle Corban thus described by Professor Paul F. Eve and myself in 1868, appears to be one and the same individual as the lady described in the following extract from the proceedings of the Alabama State Medical Association, published in the daily papers of Montgomery, Ala., April 13, 1888:

"A wonderful case of deformity or freak of nature has come to light in Alabama, which is without a parallel in history. Dr. Lewis Whaley, of Birmingham, read a paper presenting the strange case to the State Medical Association April 12, 1888. The phenomenon is in the person of Mrs. Clinton Bicknel, a white lady who resides in Alabama. She is a perfectly double woman in body and lower extremities, having four legs, four feet, and two distinct sets of physical organs. Dr. Whaley was called to see this lady some weeks ago, and was nonplussed by her strange sickness and symptoms. He called in two other physicians to assist him in making a diagnosis of the case. They found that Mrs. Bicknel was in a state of pregnancy on one side only—the left side. They

found it necessary to produce an abortion, and she gave birth to a well-formed child. Sometimes, the doctors say, the lady suffers with diarrhoea on one side and constipation on the other.

"*She was formerly Miss Josephine Myrtle Corban. At the age of 18 she married Clinton Bicknel, and is now 20 years of age. At present she enjoys good health. Photographs of the lady were presented to the Association.*"

From a letter of May 17, 1888, which I have recently received from Dr. E. H. Sholl, of Birmingham, President of the Alabama State Medical Association, I am informed that "the lady, Mrs. Bicknel, of Blount Co., Ala., is the Myrtle Corban of days gone by, *attractive in face, physically well, and able to attend to all her household duties.*"

SIAMESE TWINS.

The subsequent history of the Siamese Twins shows that the eminent surgeon, Sir Astley Cooper, was correct in his opinion adverse to an operation to separate them. The Siamese Twins died in 1874, at the age of 60. They were joined by a thick fleshy ligament, from the lower end of the breast-bone (xyphoid cartilage), having the common navel in the lower border. The anatomical examination showed that a process of peritoneum extended through the ligament from one abdominal cavity to the other, and that the blood-vessels of the two livers were in free communication across the same bridge. There are one or two cases on record in which such a ligament has been cut at birth, one at least of the twins surviving.

Twins may be regarded as the physiological analogies of double monsters, and from cases like the Siamese Twins, in which the monsters have come very near to being two separate individuals, there are all grades of fusion of two individuals into one, down to the condition of a small fragment or parasitic body in a well-grown infant, *fœtus in fœtu*.

If we refer Josephine Myrtle Corban to the class of *Heteradelphæ*, or *double monsters*, in which one of the fœtuses is more or less perfect, and the other merely an appendix, it is difficult if not impossible to determine the original and perfect fœtus from the appendix. It looks rather as if, during the development of the blastoderm or ovum, there had been a true fusion or division of the spinal cord, of the intestinal tube, and of the genito-urinary organs.

I have recently examined the case of a white lad about 14 years of age, a native of Louisiana, who was supposed to have scrotal hernia; but I found upon careful examination no varicocele and no hernia, but instead three large, well-developed testicles.

In another case, a married man "*who had never had but one testicle,*" I was called to see him in great pain, with rapid pulse and incessant vomit-

ing. The attendant physician had pronounced the case to be one of strangulated hernia, and was preparing to operate; to which procedure, however, the patient objected. Upon careful examination I found a hard tumor about 1 inch in length and $\frac{3}{4}$ inch in diameter, in the right inguinal region. By careful taxis, I brought the testicle out of the ring into the scrotum, and left the patient rejoicing in his possession of two testicles.

These facts illustrate the difficulty of forming correct conclusions in the absence of the most rigid examination. In the case of the infant J. Myrtle Corban, a rigid examination of the uterine and pelvic organs was impracticable.

The pelvis is one of the commonest regions for double monsters to be joined at, and, as in the head and abdomen, the junction may be slight or total.

The Hungarian sisters, Helena and Judith, (1701-1723) were joined at the sacrum, but had the pelvic cavity and pelvic organs separate. The same condition obtained in the South Carolina negresses Millie and Christine, known as the two-headed nightingale, and in the other recent case of the Bohemian sisters, Rosalie and Josepha.

South Carolina Negresses, Millie and Christine; Two-headed Nightingale.—I had the opportunity of examining these South Carolina twins during their exhibition in New Orleans, about the year 1869. There was evident fusion and decussation of the nervous elements of the spinal cord in the sacral region. Pressure, pricking or pinching of the lower extremities of either twin was distinctly felt by the other. This was not the case with the upper extremities. Impressions made on the hands, arms, head or neck of one twin were not felt or recognized by the other.

The following is an accurate representation of this interesting double monster, or female negro twins united at the sacrum.



FIGURE 2.—SOUTH CAROLINA TWINS, OR NEGRO
DOUBLE-HEADED NIGHTINGALE, "MILLIE
AND CHRISSIE."

"Millie and Chrissie" were quite intelligent and sang some songs with good effect, and it was affirmed that they were but one being with but one common genital organ.

The Carolina twins, "Millie and Chrissie," were united by their lower lumbar vertebræ, sacrum and coccyx. There is a single anus and a single vulva, but two hymen and two clitorides, but very probably two vaginae and two uteri.

The Hungarian Sisters, Helena and Judith, had but one vagina, although the upper part of that organ was divided into two, and the two intestines met in a single anus, placed between the four thighs. The Bohemian sisters, Rosalie and Josepha, in whom there is a junction of the posterior wall of the pelvis, present apparently a single anus, but a double vagina.

The four-legged child, Josephine Myrtle Corban, and the South Carolina twins, Millie and Christine, may be referred to monstrosities or malformations by excess.

Two ova may be formed in one Graafian vesicle, for double-yolk eggs are well known; but there is no evidence to show that there would form a double monstrosity; thus Professor Allen Thomson found, on incubating a dozen of such eggs, that not one produced a double embryo, while Wolff observed two completely separate fetuses developed upon a single yolk. The arrival of two impregnated ova in the uterus at the same time, will probably give rise not to double monsters, but to twins, and their fusion seems almost impossible. Embryologists have thus been led to the opinion that monsters by excess depend chiefly on an error of development taking place in a single germ; and this idea has been supported by the fact that Allen Thomson has shown that in birds two primitive germs may be found in one yolk, and in one *area germinaterra*; and in this way the most complete cases of double monstrosity can be explained. And in confirmation of this theory, the researches of Tireboullet may be cited. This observer has seen, instead of the single budding of the blastoderma, which is ordinarily developed into the embryo of the fish, two, or even three, buds marked off; and these, during the process of development, would meet at some point and in this manner produce distinct parts of embryos, when they are separate, whilst a corresponding region of a single organism only would be found at the point of junction. According to the mode and extent of the blastodermic buds, the monsters would vary; and so would be derived all the different varieties, from a duplicity of the face or head, the upper or lower extremities, to such extreme cases as those which we have cited, as the Hungarian sisters, the Siamese twins, and the Carolina twins.

The following case presents a remarkable blending of the male and female sex:

This singular and distressing case of malformation of the genital organs must be referred to an arrest of the development of the testicles during foetal life.

JOHN H. ALLEN, OF ILLINOIS.

Singular and Distressing Case of Malformation of Genital Organs.—The following curious case of malformation of the genital organs came under my observation during the past 10 years, and was brought before the medical class of the University of Louisiana.

J. H. Allen, aged 23, height 5 feet 7 inches, weight 150 lbs., native of Illinois, U.S.A. Dresses in male attire. Voice fine, like that of a woman. Face full and smooth, without any sign of a beard. Features resemble more nearly those of a woman. Mammæ larger than is usual in men, but smaller than those of women. Nipples small, well formed, with a distinct dark areola. No hairs around the mammæ or on the breast, which is smooth like that of a woman. With the exception of the pubes and scalp, the body is devoid of hair. The general form is that of an athletic masculine woman. Hips full, and wider than chest. Circumference around hips, $39\frac{1}{2}$ inches; circumference of chest during full inspiration, 35 inches; circumference of chest during expiration, 32 inches. Has a small, well formed penis, $\frac{3}{4}$ ths of an inch in length, and $1\frac{1}{10}$ ths inch in circumference, with glands, frænum, prepuce, and urethral opening. The patient discharged urine through this opening in my presence. Below the penis there is a slight swelling or fulness of the integuments with a distinct raphe or tramis, like that which divides the scrotum in men into two parts, extending from the anterior part of the anus to the extremity of the penis. Upon careful examination, however, no testicles can be felt on either side of the raphe, or within any portion of the fulness which corresponds to the scrotum. A careful examination by the introduction of the finger into the rectum, whilst firm pressure was made upon the abdomen above the pubes, failed in disclosing the existence of any body corresponding to a uterus. This examination, however, was not entirely satisfactory, on account of the fulness of the abdominal walls. Buttocks and thighs full and round. The upper line of the hairy pubes terminated abruptly, without any fading off in the median line, as in the male.

I gathered the following facts from this individual:

Father of John H. Allen a strong, healthy man, native of Boston, Mass.; mother a healthy, well-formed woman, native of Pennsylvania; parents have had nine children, eight of whom were well-formed; the eldest, a woman of 25, has had three well-formed children. The subject of this exam-

ination is the second child. The third child, aged 21, is a woman and married. The remaining children were three boys and three girls; and of this number one girl and two boys have died; one boy, 13 years of age, well-formed, living; two sisters, aged respectively 10 and 2 years, living.

The subject, J. H. Allen, has always been called Johnny, and was dressed as a boy from early childhood. Was not aware that there was anything peculiar in his organization until after the age of 12 years had been attained; upon one occasion, when swimming with a number of boys, it was discovered that he was not formed like a boy, and was called by his companions "a half boy and half girl." Attended school up to the age of 17, and since this time has followed the occupation of "bar-tender." Has been taken up by the police upon several occasions as a woman in man's clothing, and after being examined has been released as a "nondescript," but has always been compelled by the authorities to wear male clothing.

Prefers the male sex, never loved a woman, regards women as sisters; has loved a man devotedly, but always feared to divulge the passion. Loves the dress of a woman and despises that of a man. When insulted feels like crying, as is common with women. When traveling on the Mississippi boats has several times been approached by rough men, who threatened rape, declaring that Johnny was a woman in man's clothing. Upon one or more occasions has excited the jealousy of women, on account of the supposed attentions of their husbands. When acting with a stock company, in the character of a woman, the wife of one of the actors who played the part of lover to Johnny, was excited to violent jealousy.

When dressed in women's clothing neither men nor women ever suspect Johnny to be anything but what the dress and general appearance would indicate.

The condition of Johnny is most distressing; it is with great difficulty that a position or work of any kind can be secured or retained, on account of being suspected as a woman in man's clothing; and when traveling in strange places, or when walking upon the streets at night, is liable to insult and arrest. His most earnest wish is to be allowed to wear women's clothing, and to enter the stage as an actress.

As far as my inquiries extended, there has not as yet been any periodic discharge of blood from the urethra, rectum, stomach, or nostrils, which could be considered as connected with the menstrual function, although the patient described certain vague and uncomfortable feelings in the abdomen and certain periodic changes of the complexion and features.

The following figures 3 and 4 represent the body and thighs and genital organs of John H. Allen.

We have in this case of John H. Allen a strange

admixture of the male and female natures. The male character is represented by the minute but well-formed penis, whilst the form of the body, as shown by the photographs which I have caused

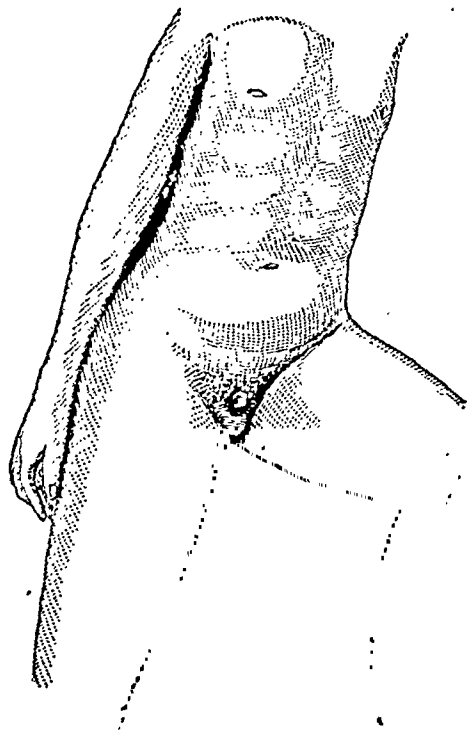


FIGURE 3.—JOHN H. ALLEN.

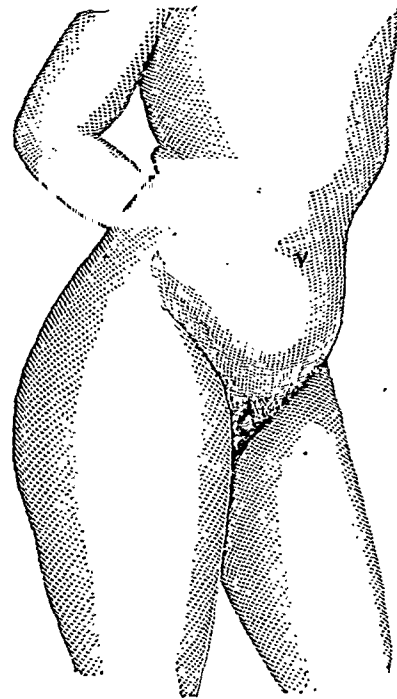


FIGURE 4.—JOHN H. ALLEN.

to be taken, approached more nearly to that of a female. The instincts were in like manner feminine. This case resembles a *hermaphrodite* in one sense, and in another a *natural eunuch*. In striking contrast to the case of John Allen we have the following:

MISS E. LAUNDRY, THE BEARDED GIRL OF
LOUISIANA.

This hairy and bearded girl was a native of St. Landry Parish, Louisiana, where she was born in the year 1873, and was exhibited during the last year to the public, accompanied by her mother, Mrs. Laundry. Her father, who still resides in Terrebonne Parish, is a farmer. Miss Emily Laundry was covered with a remarkably thick growth of soft light brown hair, from head to foot, and possessed a full beard of brown hair. Her upper lip was covered with a light moustache. Eyes brown, hair of head light brown and abundant.

The following is an accurate representation of Miss Laundry:



FIGURE 5.—Miss Emily Laundry, the bearded and hairy girl of Louisiana, 1887.

It will be seen that Miss Laundry, at the age of 13, when this photograph was taken, presented the appearance of a stout, plump, well formed young woman, well developed mammae and rounded hips.

Miss Laundry was well formed and well grown for her age. The preceding engraving represents her in the 13th year of her age, and shortly before her death, which occurred in Detroit, Mich., from diphtheria contracted in Minneapolis, April 20, 1887. The body was embalmed and shipped to New Orleans, where it arrived April 22, 1887.

Through the courtesy of the undertaker I was enabled to make a careful examination of the embalmed body, and found that the mammae and female organs were characteristic, and that with the exception of the beard, moustache, and excessive

growth of hair, she was what she was represented to be, a well formed young woman.

A relative informed me that Miss Laundry had menstruated at three years of age, and that when her mother was pregnant she constantly gazed upon an oil painting of Christ, whose face was represented with a full beard. The child was born with a beard, and the mother attributed this "freak of nature to the effects of the portrait of Christ." On her father's side many of the males were said to be characterized by an excessive growth of hair.

The singular case of John Allen may be referred to the class of *hermaphrodites*.

Under the head of Hermaphroditism, or Hermaphrodisism, may be included: 1st. Some varieties of malformation in which the genital organs and general sexual configuration of one sex approach, from imperfect or abnormal development, those of the other.

2d. Other varieties of malformation in which there actually coexist, in the body of the same individual, more or fewer of the genital organs and distinctive sexual characters, both of the male and female.

Hermaphroditism may be regarded as due to a failure of purpose, or to an uncertainty in the *nisus formativus* at an early stage of development. There is a period of time, following about the eighth week, up to which the embryo may develop either the reproductive organs of the male, or the reproductive organs of the female; in the vast majority of cases the future development and growth are carried out on one line or the other, but in a small number there is an ambiguous development, leading to various degrees of hermaphroditism, or doubtful sex. The primary indecision, so to speak, affects only the ovary or testes respectively, or rather the common germinal ridge, out of which either may develop; the uncertainty in the embryonic ridge sometimes leads actually to the formation of a pair of ovaries and a pair of small testes, or to an ovary on one side and a testes on the other; but even where there is no such double sex in the essential organs, as in the majority of hermaphrodites, there is a great deal of doubling and ambiguity entailed in the secondary or external organs and parts of generation. Those parts which are rudimentary or obsolete in the female, but highly developed in the male, tend in the hermaphrodite to be developed equally, and all of them in an imperfect manner. In some cases the internal organs of one sex go with the external organs of the opposite sex.

It is possible that in the case of John Allen the ovaries and uterus were developed partially, whilst the only representative of the male organs is the diminutive but well formed penis; hence the strange mingling of the male and female natures, the latter predominating in strength.

156 Washington St., 4th Dist., New Orleans, La., 1888.

THE TREATMENT OF SACRO-ILIAC TUBERCULOSIS.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY WELLER VAN HOOK, A.B., M.D.,
OF CHICAGO, ILLINOIS.

Time will not permit a discussion of the history, pathological anatomy, semeiology and diagnosis of tubercular disease of the sacro-iliac joint. The history of the study of the disease is intimately associated with that of "tumor albus" elsewhere, and affords a subject of corresponding interest. The semeiology and diagnosis are of importance not only on account of the fact that the disease has peculiarities of its own, but also because there are points of similarity between the signs of sacro-iliac disease and those of sciatica, Pott's disease, and especially of morbus coxarius, that may render its diagnosis exceedingly difficult, and perhaps in some cases impossible. The subject of the treatment of the disease, however, will be presented to you, as being perhaps of more general interest.

The clinical characteristics of tuberculosis at the sacro-iliac joint partake of all the general characteristics of tuberculosis of other joints. The sense of deep boggiess over the joint indicating chronic inflammatory involvement of the deep structures, and œdema of the soft parts above are present here as well as in morbus coxarius. The loss of function, the pain on pressing the bones together, the tenderness over the joint cavity, the change in attitude, the tumefaction, and finally the sense of fluctuation yielded by fluid exudates are common here as in tuberculosis of the knee or ankle. In older cases in which cold abscesses have formed and have opened outward, we find fistulæ, running in a great variety of directions from the starting point in the joint itself.

But from the symptoms of the disease we must endeavor not only to determine its pathological nature and its seat, but also its clinical tendency. For upon this will depend not only our prognosis, but also our treatment. We cannot here pause to discuss the movements effecting this tendency. Suffice it to say that they are comprised under the heads of the resisting power of the tissues and the invading power of the microbes. The anatomical evidence of supremacy is, in the case of the tissues, cicatrix formation; in the predominance of microbic power, local extension of tubercular granulations, and often the formation of cold abscesses. But, while we have learned from Koenig and others that osteal granulation-mass foci have a general tendency to peripheral extension; that wedge-formed sequestrum foci chiefly tend to spread tuberculosis toward the base of the wedge; and that some cases of synovial tuberculosis tend to dry granulation, others to abscess formation, we must confess with regret that we

cannot clinically diagnosticate all of these pathological conditions, and hence cannot from these data determine the tendency of the disease. We are compelled, therefore, to limit our deductions, after locating the disease, to a determination of its tendency from a single symptom, viz., the presence or absence of cold abscesses; for if time permitted, it would be easy to show that the other symptoms are of little prognostic value.

Of thirty-eight cases of sacro-iliac tuberculosis with abscess formation that I have collected, only three have recovered without some sort of operative interference.

On the other hand, with the observance of hygienic laws, together with the application of complete mechanical rest, sixteen out of a total of seventeen collected cases without abscesses went on to complete recovery, the only death being due to an older suppurating tuberculosis at the hip-joint. If, therefore, under similar conditions, 92.1 per cent. of the cases with abscesses die, while 94.1 per cent. of the cases without abscesses recover, we are entirely justified in concluding that the abscess cases have a very strong tendency to a lethal termination, while the cases in which abscesses do not develop tend still more strongly to recovery.

But though the cases without abscesses tend to recovery, we have numerous examples to prove that cases originally devoid of abscesses can proceed, chiefly under imperfect treatment, to local extension, abscess formation, and eventually to death.

Again, the moist form without mixed infection—even where abscesses are present,—may end in recovery, as doubtless occurred in Hilton's case already cited, by resorption of fluid matter and encapsulation of the focal detritus. Instead of the fluid being resorbed it may be discharged externally, the original focus being enclosed as before in a scar.

Death occurs in the moist form from sapræmia or from septicæmia, due to mixed infection; from simultaneous or intercurrent local tuberculosis elsewhere, as in the intestines, peritoneum, and lungs; or from general miliary tuberculosis brought about by tubercular infection of the blood itself.

Previous to the period when radical operations came in vogue for the treatment of tubercular arthritis, the treatment of sacro-iliac tuberculosis was on a par with that of other joints. Erichsen, in his celebrated clinical lecture of 1859, describes the treatment as properly including, besides internal remedies, rest with counter-irritation during the period prior to abscess-formation and opening of abscesses by valvular incision when they are large and chronic. He distinctly stated that operative interference was out of the question. In 1853, however, six years earlier, Prof. L. A. Sayre, of New York, had operated on a

case in a child by opening the joint posteriorly and gouging out carious bone. The child recovered and grew to manhood. This case has not been published in detail, and was communicated to me by Prof. Sayre. So far as I can ascertain, it is the first case in which *évidement* was practiced.

The advice of Erichsen, however, was followed out almost universally; for the formation of cold abscesses was regarded as a symptom of most desperate import. This was not unnatural, inasmuch as radical operative interference was positively forbidden, and the eventual occurrence of mixed infection seemed inevitable, with its long train of septicæmic symptoms, finally ending in death. So great was the dread of mixed infection that, in the absence of occlusive antiseptic dressings, only valvular incisions were made to allow the tubercular matter to escape. Such incisions were generally sealed up with collodion.

It is only in the last five years that operators have begun to consider seriously the question of radical treatment of the disease, operations having been performed by Tiling, of St. Petersburg, in 1883, and two last year by Gant, of England.

Those statistics already referred to when speaking of the tendency of sacro-iliac disease, are of vast importance in determining the nature of our treatment. For if 94.1 per cent. of the cases without abscesses recover, we learn two important facts, namely: that the treatment under which these recoveries took place is well nigh perfect as regards mortality, and that it behooves us to endeavor, by all the means in our power, to prevent the supervention of abscess-formation, after which there are only 7.9 per cent. of recoveries without operation. The cases that give a favorable result were all treated by rest very carefully carried out. The sacro-iliac joint cannot rest when the weight of the body is imposed upon the ischial tuberosities, or upon the heads of the femora. Hence to secure absolute immobility the patient must lie upon the back. This was Hilton's treatment. Prof. Sayre makes a thorough cauterization over the joint and uses extension. After a variable period, depending on the severity of the symptoms, he places his patients upon crutches, using a high heeled shoe on the sound side, and, to keep up extension, puts a heavy weight on the heel of the shoe used on the diseased limb. A diagnosis having been reached sufficiently early, these details of treatment certainly recommend themselves to us on account of the brilliant success with which Sayre has carried them out.

But when abscesses have formed, the treatment by rest alone has given such dismal results that we cannot wonder at the despair of Erichsen and many other writers, who regarded sacro-iliac disease as one of the most fatal in the nosological catalogue. Considering the number and variety of dangers awaiting the patient suffering from cold abscesses, we would be compelled to sanc-

tion even the most radical curative measures.

Sacro-iliac tuberculosis attended by abscess formation, I believe, admits of radical operation by no means grave in a very systematic manner, according to indications quite simple. The abscesses are compelled, by anatomical peculiarities, to pass either immediately into or out of the pelvis; that is, either anteriorly or posteriorly. This direction depends largely on the point at which the disease originated, whether at the anterior or posterior portion of the joint. Consequently, when we find originally intra-pelvic abscesses, we may justly assume that the anterior part of the joint is most likely affected; and when the abscess is extra-pelvic in origin, that the posterior portion is probably the seat of deepest involvement. Since we desire, especially in females, to do as little damage as possible to the healthy part of the joint, the problem is presented of reaching the disease, as far as may be, through comparatively unimportant soft structures. I propose two distinct procedures, according to these indications. The method of reaching the lesion when the abscess is *extra-pelvic*, is that practiced in the cases operated upon by Sayre, Tiling and Gant, namely, by simple incision over the joint, and *évidement* with the usual instruments. The operation may be performed systematically, as I have demonstrated repeatedly on the cadaver. A straight skin incision should be made from the lower border of the posterior superior spinous process of the ilium downward, that is, parallel to the spines of the sacrum, for a distance, in the adult, of about two and a half inches. If a sinus exist it should be enlarged with the sharp spoon, and if sufficient space is thus gained the operation may be completed without removing any bone except that which is diseased. If more space is needed it should be obtained by sub-periosteally removing, with a small chisel, a portion or all of the posterior inferior iliac spine, since access to the deeper part of the joint is more readily obtained by this process than by removal of part of the sacrum.

But when only *intra-pelvic* abscesses have formed, and we have reason to believe that the disease process lies chiefly in the anterior part of the joint, we must have recourse to the *second* procedure referred to, by which, if possible, the the posterior and sound part of the joint need not be disturbed. Now it must be remembered that the longitudinal axes of the auricular surfaces of the sacrum and ilium are directed antero-posteriorly, that is, almost perpendicularly to the flat surface of skin overlying the sacrum. Hence the broad expansion of the joint surfaces lies at a depth, in the adult, of two and a half to three inches from the surface. This surface may be reached as follows: The patient lying on the unaffected side with the thighs in exaggerated flexion, a longitudinal incision exposes the posterior *superior* spinous process of the ilium, from

which the periosteum and tendonous attachments of muscles are removed by dull instruments. With a pretty large chisel a piece of bone is now cut away from the iliac spine so as to allow the passage of the finger into the pelvis major, the inter-osseous ligaments having been divided by the knife. The anterior borders of the articulating surfaces are thus exposed to the touch of the surgeon, who, with the aid of a Volkmann's spoon with a long curved handle, can easily reach tubercular matter both in the bones and in the soft parts. Iodoform gauze acts as a sufficient drain.

This systematic operation was suggested by an operation done by myself, under the direction of Dr. Chr. Fenger, of Chicago. A man 32 years of age presented a "cold abscess" in the right iliac fossa, and another larger one between the crest of the ilium and the twelfth rib. For a number of reasons a diagnosis had not been made prior to the operation. The lumbar abscess having been freely opened and its walls scraped, a fistula was found by means of a probe leading downward and forward, in front of the posterior superior iliac spine into the pelvis, where denuded bone was felt. The chisel was used to remove a portion of the posterior superior spinous process of the ilium; the finger was then introduced into the larger pelvis, and the tubercular focus being located in the sacro-iliac joint, and exposed to the touch, no difficulty was experienced in removing it. The iliac abscess was drained and complete recovery ensued.

The points in treatment submitted to your further consideration are as follows:

1. *Where no abscesses have formed*, hygienic and general symptomatic treatment, with counter-irritation by means of the thermo-cautery where pain exists or improvement is slow, should be combined with complete mechanical rest, aided by extension.

2. *Where abscesses or their resulting fistulæ exist*, cases should be subjected at the earliest practicable moment to a thoroughly radical operation by évidement performed posteriorly, that is, directly, when the abscess is extra-pelvic in origin; performed, as it were, from the pelvic side, whenever the abscess originates within the pelvis.

CHOREA OF THE SOFT PALATE,

CAUSED BY THE HYPERTROPHY AND HYPERÆSTHESIA OF THE
NUCOUS MEMBRANE COVERING BOTH INFERIOR
TURBINATED BODIES.

*Read before the American Rhinological Association, at Cincinnati,
Ohio, Sept. 12, 1888.*

BY J. E. SCHADLE, M.D.,

OF ST. PAUL, MINN.

That the origin of not a few reflex nervous disorders can with a certain degree of exactness be traced to the presence of morbid conditions of the naso-pharyngeal cavities, is a question no longer

doubted. The observations of recent writers on rhinological subjects furnish us conclusive evidences that some forms of headache and of spasmodic asthma are in many instances the outgrowth of a nasal polypus, a turbinated thickening, or a septal deformity. The fact, too, is known that these reflex neurotic disturbances disappear soon after appropriate measures of treatment have been directed towards the removal of their cause.

The purpose of this paper is to call the attention of the Fellows of this Association to a case of choreiform movements of the soft palate appearing in a young lady whose family history is somewhat unusual, as well as remarkable, and whose affliction is without doubt phenomenal. The patient was referred to me by my friend, Dr. Baker, of this city, whose letter of introduction reads as follows:

"ST. PAUL, Minn., April, 16, 1888.

"*Dear Doctor:*—This interesting case came under my care June 3, 1887. The only thing complained of was a constant contraction and relaxation of the levatores palati. Each contraction carried the uvula upward and backward till it came in contact momentarily with the upper and back part of the pharynx. The relaxation and separation of the moist mucous membrane surfaces caused the sound. The noise was like that produced by a rapidly ticking watch, and of the same frequency. It was never absent except during sleep. The young lady was in excellent health, all the bodily functions being well performed. My treatment was as follows:

R. Zinci bromidi ʒj.

Syr. simplicis ʒj.

M. Sig. Ten drops in water four times a day, increase one drop each day until the dose nauseated.

"This not producing the desired result, I gave tr. physostigmatis in doses ranging from fifteen to thirty drops. After continuing this remedy for a time, I abandoned it and prescribed fl. ext. cimicifugæ rac., in doses of f3ss to f3j, every four hours.

"About July 7, 1887, I began the trial of galvanism, used eight cells of McIntosh battery and placed the positive pole with a sponge electrode at the back of the neck; the negative pole with a metal-tipped electrode such as is used for the urethra, was applied to the palate just above the uvula. The sittings were of five to ten minutes' duration, and I increased the number of cells to eleven. At the second treatment movements ceased and did not return for several hours.

"After the fifth or sixth application the ticking stopped and did not return till the first of this month when she called on me. Examination showed enlarged tonsils, with evidences of throat and nose disease. Thinking the condition of the nose and throat caused a return of the choreic movements, and cure of same might permanently relieve, I now introduce her to you for examina-

tion and treatment. A singular feature of the case is that her general health had been almost perfect through all these years. Another item of note is that no other sets of muscles were involved.

Yours, truly,

J. F. BAKER."

In the *Archives of Otolaryngology*, Vol. xii, No. 1, March, 1883, this same case is reported by Dr. Cornelius Williams, a distinguished oculist and aurist of this city. In this article Dr. Williams says: "When Violetta was ten years old, having occasion to get up in the night, she lost her way in going back to her bed, and reaching her grandmother's room by mistake she laid her hands upon the aged lady in the dark, and so alarmed her, and was herself so much frightened by the grandmother's shrieks, that she almost went into convulsions. She refused to return to her own bed, but lay in her sister's arms, starting and sobbing, the night through. Next day she was extremely pale and nervous, nor did she recover her wonted spirits for a number of days. This happened in the Spring of 1880, and a short time after this the child discovered that a strange clicking sound was produced in her mouth, but suffering no inconvenience from it she mentioned it to no one.

"In the June following she fell into Lake Elmo (Minn.), and came near being drowned, and a short time after this she called the attention of her mother to the clicking, which had now become constant. The family medical attendant was consulted, who pronounced it as a common affair. The uvula was cut off entirely, and one tonsil was amputated without result as far as concerned the clicking. The patient is in good general health; appetite and digestion good; sleeps well. She is easily fatigued, but is kept up by any excitement. There has been for the last three weeks diurnal incontinence of urine, the act of micturition recurring about every half hour, but at night it is hardly ever necessary for her to get up more than twice. Dr. D. W. Hand, who was kind enough to examine her, informs me that there is considerable leucorrhœa, and that the urethra is unusually large and patulous. He explored the bladder and found no evidence of stone. The act of micturition is not painful. Drs. Hand, Boardman, Abbott, and Wheaton, examined her heart at my request, and report that there is nothing abnormal about it. Upon looking into the patient's mouth it is perceived that the velum palati is rapidly raised and lowered without being made tense in its entirety. At the moment of relaxation of the levatores a sound is produced which is as much as can be like the ticking of a small brass clock, and in a still room it may be heard at a distance of twenty feet. The clicking corresponds to a complete contraction and relaxation of the levatores palati, and by actual count is 120 a minute, with very little variation in frequency at any time. When the mouth is opened widely the azygos

uvulæ is sometimes seen to contract, but such contraction would seem to be physiological.

"The tone of the clicking is changed by closing the nose, and by otherwise altering the usual conditions of the mouth and nose as to the volume of air contained, but that, nor any other manipulation, procures the cessation of the noise or its cause. Laryngoscopic examination shows the larynx to be normal, save a slight congestion. Rhinoscopy is not practicable. Otoscopy reveals the membrana tympani of each ear slightly indrawn, the handle and short process of the malleus of the right being abnormally prominent. Light spot gone from both Mtt.

"By means of the 'diagnostic tube' I am able to hear the clicking sound in either of the patient's ears; more distinctly in the right. It may very well be likened to the ticking of a watch under a pillow, or the sound of the foetal heart. If there is any movement of the membrana tympani, I have not been so fortunate as to observe it. The girl's voice is natural, and she can sing with correctness, uttering the chest notes without difficulty, but is unable to produce head notes at all. In running the scale, a decided tremolo is remarked. The patient, of necessity, breathes through the mouth, and from habit keeps it open during sleep. When there is tonsillitis, to which she is subject, there is considerable drooling. At such times she is apt to have glottic spasm. The spasm of the levatores ceases during sleep. At irregular intervals, perhaps fifty or a hundred times through the day, there is an interrupted spasm of the diaphragm, giving rise to a sudden and deep inspiration in two or three motions, as in sobbing, followed by prolonged expiration. At times, it may be for an hour or half a day, she hears in her ears a sound comparable to the rapid revolution of a small fan-wheel. Acuteness of hearing normal."

With the above information relating to the previous history, we are brought to the present consideration of this singular malady, a condition which I prefer to speak of as choreiform movements of the soft palate.

In company with her mother, Miss V. Z. presented herself at my office for examination on the 16th of April, 1888. She is a decided brunette, 17 years of age. General appearance is good; tall and well developed. Seems to be of a cheerful temperament.

Menstruation commenced normally, the epochs occurring regularly up to the present time. Digestive organs in a fair condition; suffers from constipation and flatulency quite frequently. Urinary function normal. Heart's action more or less excited; the heart beats tumultuously when ascending a flight of stairs, a hill or some other elevation. Complains in a marked degree of obstructed nose-breathing; dry sensation of the pharynx, disturbed sleep, and incessant mouth-

breathing. Organization is of the nervous type; excitement affecting nervous system is not well borne. Voice is impaired, especially when attempting to produce head tones, as in singing. The principal affection complained of, and for which she was referred to me, is the spasmodic movement of the velum palati.

Of the family history, particularly that part of it relating to the father's side, much can be said which not only has a special bearing on the case under consideration, but also gives valuable information for the neurologist. A predisposition to melancholia and suicide, handed down from the grandfather to the present generation, seems to exist. The grandfather, a Hungarian by birth, and a school-teacher by occupation, shot himself at the age of 58. An aunt, 55 years old, drowned herself in 1885. She was married, and was the mother of five children, one of whom, a son aged 28 years, came to his death two years ago by shooting himself. Another son, still living, suffered from melancholia for some time after the tragic deaths of mother and brother.

Conrad, father of Miss Z., at the age of 46, drowned himself while suffering from a fit of insanity. It is said he was an intelligent gentleman and an accomplished musician. In July this year, a brother aged 28 died from the effects of carbolic acid, which he drank with a view to self-destruction; this being his second attempt at suicide. The mother is healthy. Aside from an ancestral strumous tendency, her family history is good.

A faucial examination reveals distinct rhythmic choreiform movements of the velum palati accompanied by a peculiar clicking sound, distinctly audible for a distance of 12 or 15 feet from the patient. The levators of the palate seem to be the ones especially engaged in the production of these involuntary muscular phenomena. The levators act in unison with each other, and volition has no control over their behavior. The mucous membrane covering the palate and adjacent structures is anæmic, and has adhering to it a glistening tenacious secretion which, by ordinary attempts, is difficult to remove.

The left palatal tonsil is larger than it should be normally, a condition due to frequent attacks of acute tonsillitis to which she has been subject since childhood. Only a remnant of the uvula is to be seen.

By an anterior rhinoscopic examination I find chronic hypertrophy of the inferior turbinated bones, and in a more marked degree, of the middle ones, the presence of whose redundant tissue exerts pressure on the septum and produces obstruction. Posterior examination with the rhinoscope brings into view unusual chronic enlargement of the pharyngeal tonsil. It is lobular and irregular in shape, and extends with its free extremity from a broad base in the vault to some

distance below the upper margins of the choanae of the nose. Inspection of the posterior nares presents excessive chronic thickening of the pituitary membrane covering the posterior third of the inferior turbinated bones. That part of the nasal passages is almost occluded by this condition. The aspect of the septum posteriorly is thin and pale.

There is an important feature entering into the history of this case which must not be overlooked. I refer to the extremely hyperæsthetic state of the intra-nasal mucous membrane. Mackenzie's sensitive areas are prominently characterized by it. Even the margins of the nostrils sympathize in this respect with the mucous membrane lying beyond them. The presence of a speculum causes a disagreeable feeling and creates nervous irritation. The use of the probe in the chambers of the nose is utterly intolerable; contact of it with any portion of the membrane, and, more particularly with the posterior part of the inferior turbinated bones, at once gives rise to violent sneezing and spasmodic coughing. A flow of tears invariably follows these manipulations.

Treatment.—My treatment was mainly surgical. The first impression entertained was, that possibly the enlarged pharyngeal tonsil might have been a source of the trouble, and that a thorough removal of it would do away with a foreign element constantly coming in contact with the opposing surface of the velum palati, and exciting thus into action clonic spasms. Snaring was impracticable.

I therefore, by the use of Cohen's post-nasal cutting forceps, and of the electro-cautery, reduced the growth in its entirety. This procedure was ensued by cessation of the choreiform movements which remained absent for a period of two weeks, when they suddenly returned during a spell of nervous excitement from which the young lady was suffering.

My attention was now turned to the treatment of the nasal passages. The pathological changes found in them offered a theory for a reflex cause of the affection. Cocainizing the intra-nasal mucous membrane generally produced relief for half an hour. With a view to reduce the hyperæsthesia and hypertrophy of the turbinated bodies, I employed the electro-cautery, thoroughly burning the affected parts. An immediate result took place; the trouble at once ceased. Two cauterizations were necessary to effect entire perviousness of the nostrils and overcome obstructed respiration of the nose. Nose-breathing displaced mouth-breathing, and the dry sensation and sticky secretions of the pharynx gradually disappeared. The patient soon showed improvement in other respects.

The functional derangement of the heart and shortness of breath passed off, while the general

nervous system also gained tone. She also can now speak and sing with a clearer voice, the head tones improving daily.

Beyond a doubt a cure has been produced, the permanency of which already having been severely tested.

The melancholly death of her brother by suicide, mentioned in the family history, having occurred in the meantime, in itself was sufficient to reproduce the disturbance in consequence of intense emotional excitement into which she was thrown at the time. Upon receiving the news she was immediately seized by a violent attack of hysterical laughing which continued uninterruptedly for at least an hour. From this condition she passed for a few minutes into general muscular twitching. The velum palati, however, remained then as well as until now perfectly quiescent.

Etiology.—The choreiform movements of the soft palate as they were seen in this case, doubtlessly had for their origin a reflex cause, situated in a neoplastic and hyperæsthetic condition of the intra-nasal mucous membrane. In view of the fact that another exciting element has been mentioned as figuring in the etiology of the affection, the nasal disease may be termed the remote exciting cause.

Reference to a quotation from Dr. Williams informs us that the peculiar disorder of the velum palati became apparent soon after the patient, when still a child, had experienced on two consecutive occasions severe fright. This he maintains developed by its immediate exciting influence, the movements, which occurrence, it is my belief, simply brought into conspicuous activity what the reflex cause years before already had established.

The family history unmistakably illustrates a neurotic diathesis which evidently forms the predisposing cause.

Dr. C. E. Riggs, of this city, Professor of Nervous and Mental Diseases in the Medical Department of the University of Minnesota, who at one time saw the patient, personally related to me the following opinion when speaking of the nervous origin of the trouble:

"The antecedents and personal history of Miss Z., as related to me, clearly indicate the unstable and illy balanced condition which characterizes the nervous diathesis.

"Following the teaching of Pierret, we may regard all the intracranial nerves as analogous to a spinal nerve; the posterior root of this hypothetical nerve being the sensory portion of the fifth, its anterior root all the intracranial motor nerves, including the motor portion of the fifth. This hypothesis readily explains the clonic spasm of the levator muscles.

"Catarrhal states of the mucous membrane, more especially of the nasal and pharyngeal pass-

ages, may have their origin in a poorly nourished nervous system.

"The facial nerve gives off in the aqueductus fallopian three branches, two of which, the great and small superficial petrosal nerves, furnish motor influence to the levator palati, the azygos uvulæ, the tensor palati and tensor tympani muscles; through Meckel's ganglion the great superficial petrosal nerve is distributed to the levatores palati.

"The diseased surfaces under consideration derive their sensation from the fifth. The catarrhal condition of these mucous surfaces may be considered both as a cause and an effect, but the prime factor in the evolution of this peculiar clonic spasm I believe to be the intense nerve sensitiveness of the patient, since, without it, there would have been no reflex excitation, but a purely local condition.

"The excessive hyperæsthesia of the diseased tract clearly shows great irritation of the terminal sensory filaments of the fifth nerve.

"Accepting Pierret's hypothesis that the cranial nerves, as a whole, comport themselves like a spinal nerve, the reflex nature of the spasm is readily describable."

That this is a rare case is quite evident; whether another just like it has as yet been reported is doubtful.

The cases reported by Sajous (*Universal Annual*), and by Burnett (*Trans. of the American Otological Society*, vol. iii, part 3), were, it appears, particularly associated with disease of the Eustachian tubes or ears, and the crackling noises characterizing them the authors ascribe to aural complications.

Mackenzie, in Wood's "Reference Handbook," when speaking of the subject, says: "Clonic spasms of the soft palate, with objective noises in the ear, dependent upon neuralgia of the trigeminus, have been observed by Scheck."

A series of interrogations always gave negative results in the case I have here reported; no information could be obtained which led to the belief that Eustachian or aural diseases had at any time existed.

Then, as to the clicking sound; what produced it? It was seen distinctly that the levator muscles of the palate were the only ones engaged in the spasmodic actions; therefore, by repeatedly watching these phenomenal movements, the conclusion seems reasonable that the click resulted from the combined effect of muscular rigidity and sudden disengagement of the velum palati from the pharyngeal vault.

104 East Third St.

A SOCIETY of German Dermatologists is to be formed. Circulars have been sent out by Professors Neisser and Pick, and a committee has been formed for carrying out the plan.

MEDICAL PROGRESS.

ANALYSIS OF 500 CASES OF ACUTE RHEUMATISM.—DR. H. WALTER SYERS thus analyzes 500 consecutive cases of acute rheumatism:

Every case of acute rheumatism admitted to the Westminster Hospital during the last seven years has been carefully investigated with especial reference to the inheritance of rheumatism, nervous disease, and of phthisis. Attention has also been given to the subject of heart lesion. The analysis given below is based upon an examination of 500 consecutive cases, the history having been obtained for the first four years by Mr. Hebbert, medical registrar during that period, and continued by myself.

Sex.—There were 235 males and 265 females.

Age.—Under 5 years, 1; from 5 to 10, 26; 10 to 20, 188; 20 to 30, 154; 30 to 40, 90; 40 to 50, 29; 50 to 60, 10; over 60, 2.

Inheritance.—(a) There was a history of *rheumatism* in near relatives of the patient (father, mother, brother, sister, uncle, aunt) in 193 cases, or in 38.6 per cent. of the whole number admitted. A history of acute rheumatism in members of the family similarly related to the patient was found in 107 cases, or in 21.54 per cent. of the whole number. A history of acute rheumatism occurring in either parent was found in 46 cases, or in 9.2 per cent. of the whole. I have further ascertained the number of cases with acute rheumatism inheritance occurring at each period, and have compared these numbers with the numbers representing the cases occurring at the corresponding periods. The result is as follows:

Age.	Total.	Acute Rheumatism Inheritance.
Under 5	1	1
5 to 10	26	7=1 in 3.7
10 to 20	188	62=1 in 3.03
20 to 30	154	24=1 in 6.4
30 to 40	90	9=1 in 10
40 to 50	29	3=1 in 9.6
50 to 60	10	1=1 in 10
Over 60	2	0

(b) *Gout*.—A family history of gout was obtained in only 38 cases, 7.6 per cent. of the whole number.

(c) *Neurosis*.—Of nervous disease in the family history I found 80 cases or 16 per cent. Of these 80 cases, a family history of insanity was obtained in 39 cases, and a history of epilepsy in 22 cases.

(d) *Phthisis*.—In 83 cases (16.6 per cent. of the whole number) there was a family history of phthisis found. Thus the percentage of cases owing a phthisical family history is a fraction greater than that representing a neurotic inheritance.

Heart.—The cases complicated with heart affection were 267, or 53.4 per cent. of the whole. Of these, there were 48 cases (17.9 per cent.) of

pericarditis, 83 (31 per cent.) of endocarditis, and 136 cases (50.9 per cent.) of combined endocarditis and pericarditis. In 160 cases it was possible to ascertain the age at which the heart affection occurred, and the result is as follows: Under 5 years of age, 0; 5 to 10, 14; 10 to 20, 87; 20 to 30, 37; 30 to 40, 16; 40 to 50, 4; 50 to 60, 2; over 60, 0. The percentages of the numbers admitted with heart affection (for the first time) at the corresponding ages being as follows: Under 5 years of age, 0; 5 to 10, 51.85; 10 to 20, 46.52; 20 to 30, 24.02; 30 to 40, 17.7; 40 to 50, 13.8; 50 to 60, 20; over 60, 0.

Only in 19 cases was the occurrence of *chorea* noted in the history of the patient, either before admission, during the attack of acute rheumatism, or during convalescence. Of these 19 cases, 12 were females and 7 males. In 7 cases the chorea was followed by acute rheumatism; in 4 cases the attack of chorea occurred during convalescence; in the remaining 8 cases the chorea and the rheumatism were separated by an interval varying from several months to several years.

Season.—From January to March, 146 cases were admitted, or 29.2 per cent.; from April to June, 92 cases, or 18.4 per cent.; from July to September, 120 cases, or 24 per cent.; and from October to December, 142 cases, or 28.4 per cent.

From April to September, 205 cases, or 41 per cent., were admitted; from October to March, 295, or 59 per cent. In January were admitted 54 cases; in February, 48; March, 44; April, 32; May, 28; June, 32; July, 28; August, 45; September, 47; October, 56; November, 34; December, 52; total, 500.

Mortality.—The total number of deaths was 15, or 3 per cent. Of males 9 died, and 6 females. There were 2 deaths with hyperpyrexia, the temperatures attained being respectively 108.8° and 107.2°; 1 death resulted from ulcerative endocarditis, 5 from pericarditis and endocarditis, 1 from pericarditis and pneumonia, 1 from pneumonia, 2 from collapse, and 3 from old-standing morbus cordis.—*Lancet*, June 30, 1888.

TREATMENT OF UNUNITED FRACTURE OF THE NECK OF THE FEMUR.—In the *Riforma Medica*, of August 14, a case is related, in which PROF. LORETA successfully treated an ununited intracapsular fracture of the neck of the femur, by scraping the fractured surfaces and inserting a bundle of metallic sutures between them. On January 23, a robust man, æt. 36, was admitted into the Bologna clinic with the history of a fall on the left hip, nineteen months previously, since which he had been quite unable to stand, and had suffered from constant severe pain, shooting from the left hip-joint into the gluteal region, the point of greatest intensity being over the course of the

sciatic nerve. The limb was much wasted, but it was normal in position, and scarcely at all shortened. Flexion and extension of the thigh on the pelvis were almost impossible, but the patient could occasionally execute very slight movements of rotation and abduction. In rotation, he was sometimes conscious of faint crepitus in the trochanteric region. Feb. 15, Prof. Loreta operated with full antiseptic precautions. He made a long incision behind the great trochanter to expose the capsule of the joint, when he noticed a depression between the intra-capsular and extra-capsular portions of the neck of the femur. On moving the limb, it was found that there was a fracture without displacement in that situation. The capsule was then opened, the fibrous tissue between the fragments divided, and the fractured ends carefully freshened by scraping with a raspator. As it would have been very difficult to wire the fragments, a bundle of from eight to twelve metallic sutures was introduced between them, and brought out at the lower angle of the external wound. The wound was carefully cleansed, a drainage-tube inserted, the edges brought together with deep and superficial interrupted sutures, and the whole covered with a sublimate dressing. A long outside splint was then applied. Five days after the operation, the bundle of metallic sutures was removed, and the wound healed by first intention. In less than a month the pain had permanently ceased, and fifty-five days after the operation the patient left the hospital, being able, not only to stand, but to walk with no further support than an attendant's hand.—*British Medical Journal*, Aug. 25, 1888.

THE USE OF SALOL IN THE DISEASES OF CHILDHOOD.—DEMME has used salol in four cases of acute articular rheumatism, in two of acute endo- and pericarditis accompanied with articular fluxion to a moderate degree, and in two of catarrh of the bladder; also a topical application in two cases of burns. In the first two patients with the acute rheumatic polyarthritis, two boys of 8 and 13 years of age, the salol was given as long as the febrile symptoms persisted, as well as the swelling and redness of the joints, in doses of 3 or 4 grams daily. This dosage was continued with the first for five and the second for seven days, the dose being reduced to 2 grams and then to 1 gram during convalescence. In the third case, a girl of 7 years, in which all the articulations were swollen, and the fever was considerable, 20-grain doses of salol were given, and in forty-eight hours the intensity of the process had greatly diminished. The fourth patient was a girl 9 years of age, who vomited the first dose of salol which was given. An enema, containing 2 grams of salol, was then given, but in eight or ten hours an urticaria appeared which involved the entire surface of the body. The

salol was suspended, and two days later a dose of salicylate of soda produced an eruption similar to that produced by the salol.

Antipyrin was then given in gram doses, and in five days the rheumatism disappeared. In the two cases of endo- and pericarditis salol produced a favorable effect only when the cardiac action and intravascular pressure had been regulated by digitalis. The first of the two cases of catarrh of the bladder was caused by cantharides in a boy 5 years of age. The salol was given in doses of 1 gram, and this was gradually increased to 2½ grams; after two days the urine became acid, more abundant, and caused less pain in its passage. The case was cured in fifteen days. The second case was chronic cystitis following measles, and was equally well treated with salol. In the two cases of extensive burns the salol was mixed with an equal quantity of talc powder and dusted upon the wounds, which quickly cicatrized.—*Archives of Pediatrics*, September, 1888.

TREATMENT OF DIPHTHERIA.—COUSOT discusses anew the question whether diphtheria is primarily a general disease with local manifestations, or whether the diphtheritic membrane is the first factor in a general intoxication. The author believes that the great point is to combat the local manifestations from the beginning, and that they constitute the origin of all subsequent accidents. He believes that the following principles should dominate all rational treatment of this disease:

1. The medical treatment of diphtheria should be principally local at the beginning of the disease.
2. The organized germs of the products of diphtheria should be destroyed or sterilized wherever they occur.
3. Putrefaction of the elements of the diphtheritic membrane should be prevented at all hazards.
4. If the disease has reached an advanced period and general poisoning has supervened, local treatment should still be rigorously continued, in addition to the adoption of suitable means for controlling the general symptoms. The best means for the treatment of diphtheritic products with which the author is acquainted is a preparation of tannin, alcohol and mucilage applied with a syringe. Tannin is a safe antiseptic which may be extensively used without fear of injury to delicate tissues. The mixture which the author uses contains:

Mucilage	100 parts.
Tannin	10 "
Alcohol	2 to 20 "

If the false membrane is discovered when there is only a single patch upon the skin or the mucous membrane external to the air-passages, applications of the tannin may prevent its spread. If the pharynx, tonsils, or nasal fossæ are involved, the mixture should be injected by the mouth or nose every two hours. Evidences of putrefaction

will disappear after the first few injections, the membranes will shrivel, and the underlying mucous surface will assume a healthy red appearance.—*New York Medical Journal*, Sept. 15, 1888.

TREATMENT OF RUPTURE OF THE BLADDER.—In an original memoir contributed to the July number of the *Archives Générales de Médecine*, DR. A. BLUM has reported a case under his own care of intraperitoneal rupture of the bladder with peritonitis successfully treated, after an interval of forty hours, by laparotomy and suture of the wound. Of twelve recent cases—eleven collected from English and German sources—in which laparotomy was performed for intraperitoneal rupture, six ended in recovery and six in death. In the table of collected cases published by Bartels in 1878, ninety-three out of ninety-four cases were fatal. The following conclusions are given by Dr. Blum at the end of his paper: "The surgeon, in dealing with a case of certain or supposed rupture of the bladder, ought not to hesitate to incise the linea alba as soon as possible, in order that he may make out precisely the seat and extent of the lesion. If the laceration is seated near the base of the bladder—that is to say, if the peritoneum be not involved, perineal cystotomy will be indicated. In cases of intraperitoneal rupture the edges of the wound in the bladder should be brought together by sutures, and the 'toilette' of the peritoneum be performed without subsequent drainage. The best kind of suture, and the only one that has been successful in man, is that of Lembert (sero-muscular suture, not including the mucous membrane). When, in consequence of its situation and extent, the wound cannot be united, it should be sutured, if possible, to the abdominal wound, or drainage should be effected, according to the practice of Socin, by an artificial perineal wound. The existence of peritonitis at the time of operation is not a contraindication to stitching of the wound in the bladder. Still, the earlier the performance of laparotomy the better are the chances of success.—*London Medical Recorder*, August 20, 1888.

THE RESECTION OF GREAT VENOUS TRUNKS IN THE EXTIRPATION OF MALIGNANT TUMORS.—MADELUNG has been trying the effect of resecting the great venous trunks near malignant tumors when the cancerous disease did not appear to have become generalized, on the ground that the veins with the lymphatics form the road by which cancer extends. Schevan, in his inaugural thesis (*Contrib. f. Chir.*) reports fifteen cases. In eleven the jugular was resected, once on both sides. Twice there was resection of the common carotid and of the jugular at the same time, eight times for glandular metastatic carcinoma, and three times for lympho-sarcoma. In four other cases the femoral vein was resected, once with resection

of the artery, twice for cancerous glands following primary disease of the genitals, once for a tumor of the vagina, and once for primary cancer of the glands. Three patients died as a result of the operation; one of gangrene of the lower extremity and septicæmia following resection of the femoral vein, another as a result of resection of the common carotid and jugular, a third without the cause of death being positively established. Three died of local return, two of exhaustion, and two more of the primary disease, which could not be removed. Two were still alive, though suffering from a fatal return of the disease, and one was cured, though the observation dated only one month after the operation. Two patients were considered as cured; in one, death followed two years after the operation without any return, and the other had lived three years without a return.—*New York Medical Journal*, Oct. 6, 1888.

RESECTION IN ARTHRITIS DEFORMANS.—ZESAS, of Bern, in a paper on this subject, discusses the results of resection in cases of arthritis deformans with regard to the relief of pain, freedom from relapse, and the functional capacity of the limb. There seems to be good reason for asserting that the pains which cause so much distress in coitis deformans will be removed after resection, and reference is made by Zesas to permanent and complete relief of pain after resection of the elbow-joint for arthritis deformans. The results of the resection of the hip performed by Dr. Niehaus two years and a half ago, and those of like operation on other joints affected with arthritis deformans, show that there is no tendency to a recurrence of this disease after such treatment. With regard to the functional results of the operation, on the other hand, the prognosis is very unsatisfactory, since in three of the cases of resection of the hip in which reports have been given of the subsequent condition of the patients, the limb was too weak to sustain the weight of the body, and locomotion could not be effected without the use of crutches or some other means of support. It remains for subsequent and more abundant experience to determine whether such unfavorable results be due to the advanced age of the subjects of coitis deformans or to the nature of the affection itself, which may possibly prevent the development of a serviceable joint.—*Deutsche Zeitschrift für Chirurgie*, Bd. 27, Hft. 5 and 6.

A SUBSTITUTE FOR COD-LIVER OIL.—LAMANDE recommends the following as a substitute for cod-liver oil:

Glycerine	℥x.
Tincture of iodine	℥ss.
Iodide of potash	grs. xij.
	℥ij

S. One teaspoonful fifteen minutes before meals.

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SATURDAY, OCTOBER 20, 1888.

THE BRADSHAWE LECTURE ON URÆMIA.

The Bradshawe Lecture before the Royal College of Physicians this year, by DR. WILLIAM CARTER, was on a subject of great interest, which was ably handled by the lecturer. Beginning with the definition, "Uræmia may be defined as the altered condition of health caused by the accumulation within the body of poisonous products that should be eliminated by the kidneys," the lecturer points out that the symptoms of this altered condition are so various in themselves, and so variously combined, that within the limits of this general definition what on the surface appear to be altogether different diseases are formed; and it is not surprising that many explanations have been offered of such varying phenomena.

After a careful review of Traube's theory of uræmia, that the nervous symptoms are due to cerebral anæmia, and never occur without preceding cardiac hypertrophy and blood-dilution; that heightened blood-pressure causes cerebral anæmia, and as this affects one or another portion of the brain, there will be a preponderance of either coma or convulsions, the last being limited if the anæmia is limited, general if it is general, Dr. Carter is not inclined to support this theory. Much good work in renal pathology has been done by the French School of late years, and this is specially considered and discussed by Dr. Carter. The modification of Traube's theory adopted

by Jaccoud and by some eminent English clinicians seems far from unreasonable to him. It will be remembered that Traube's theory was called forth chiefly by the fact that the brain is pale and watery in some cases of death from uræmia. This, however, is not a constant pathological condition. Nevertheless, this condition should be regarded as of considerable importance, and may not, after all, be so antagonistic to the views of the chemical pathologists as they think. "We have," says Dr. Carter, "no absolutely certain *post-mortem* signs that enable us to say that either local dilatations or local spasms of cerebral vessels have occurred during life in any case of Bright's disease; but as, at any rate vascular spasm certainly occurs in other and sometimes strangely limited parts, where the death-like pallor which it produces can be plainly seen, it is at least not improbable that it may also occur in some of the vessels of the brain, where, from the nature of the case it cannot be seen."

But we must pass from this interesting aspect of the subject to the experimental methods of investigating uræmia. And we may begin by stating a cardinal point made by Dr. Carter, that uræmia is a toxæmia, and that whatever increases the flow of blood to the nerve-centres in a case of renal disease adds to the probability and danger of toxic manifestations. It is agreed that there is a poison producing the uræmia; but what it is we do not know. We may be said to know, however, that it is not urea, not carbonate of ammonium, nor any one substance. We know that normal urine is toxic, that it contains alkaloidal and other poisons; if these be not properly eliminated the system must suffer from their poisonous effects. The experimental investigation of uræmia, while showing that the difficulties to be overcome are many and great before the pathogenesis of uræmic poisoning can be understood, show at the same time what some of the difficulties are, and give great encouragement. And while great caution is required in interpreting clinical facts by the results of experiments on the lower animals, yet the experimental investigations that have been made are gradually opening up new methods of practice, and at the same time show what was good in the older methods by giving reasons for their being good.

In his recent work on "Auto-Intoxication in Disease" Bouchard's conclusions in regard to

uræmia may be thus summarized: The urine as a whole is poisonous. The sources of its toxicity are fourfold—namely: 1. Aliments, especially their potassium compounds. 2. The absorbed products of intestinal putrefactions. 3. Secretions, such as the bile, saliva, etc. 4. Tissue disintegrations. These circulate in the blood, and, unless removed, poison the tissues. Bouchard showed experimentally that the nature of the toxicity of the urine varies according to many circumstances, and he has determined the presence of seven distinct toxic substances combined in the most variable proportions under different circumstances. Two of these substances were convulsivant, one diuretic, one narcotic, one sialagogue, one pupil-contracting, and one temperature-reducing. We know, too, from recent investigations, that the urinary poisons have different effects according to the times and circumstances of their formation, at one time stimulating, at another inhibiting the same cortical cells of the brain, thus at one time causing paralysis and at another time convulsions in the animals into whose blood they are injected.

What then, in the way of treatment, have the experimental studies of uræmia taught us? Not only have these studies taught us newer and better methods of treatment, but they have pointed out earlier symptoms, the importance of the recognition of which cannot be overestimated. Dr. Carter shows that the principles on which practice must be based consist mainly (1) in cutting off one or another of the urinary poisons at their source, now that we know to some extent what these poisons consist of, and whence they are derived. Under this head we recognize the great importance (a) of limiting potassium salts both in food and in medicine, (b) of employing the simplest and most easily assimilated diet, such as milk, (c) of bowel disinfection, (d) of maintaining at its best the functional activity of the liver, (e) of care in the nature of nutrient enemata when these are required. (2) In directly and indirectly withdrawing or diluting the uræmic poison, by (a) venesection, (b) purging, (c) sweating, (d) transfusion. (3) By burning up the poison, by (a) active exercise, (b) the administration of oxygen or oxidizers. (4) In antagonizing the poison, or at least overcoming special symptoms. Practically, then, the sodium salts should be substituted for the potassium salts, the latter being forty

times as toxic as the former. The value of the milk diet has long been known, and the reason for its value is apparent. If it cannot be digested, then to the diet of foods that leave more residuum than milk must be added certain intestinal disinfectants, little soluble and non-poisonous, such as naphthalin, iodoform, and animal charcoal. As to the value of blood-letting in convulsions or coma, Dr. Carter thinks that if the pulse is hard and quick, a moderate bleeding will do no harm, even if the patient should be anæmic, and if he is not anæmic it will be likely to do good. Adding to the amount of blood, says Dr. Carter, will equally dilute the poison. Dieulafoy has cleared up the uræmic symptoms and secured great improvement by transfusing 120 grams of blood, and Dr. Carter has transfused freshly drawn goat's milk; or the solution of the chloride, phosphate and carbonate of sodium may be injected. The value of purgation and diaphoresis are so well known that they need not be insisted upon. Jaccoud's treatment of Bright's disease by inhalations of oxygen seems to promise good results. For the relief of uræmic asthma, it is probable that most good will be obtained from the agents that relax vascular spasm, such as ozonic ether.

Dr. Carter's admirable lecture may be found in the *Lancet* of August 25, and in the *British Medical Journal* of September 1. One finishes reading it with the feeling that, obscure as the subject is, he knows more of it than he did before.

DISINFECTION AND DISINFECTANTS.

The first report of the Committee on Disinfectants of the American Public Health Association has just been issued. If there were no other *raison d'être* of the American Public Health Association, this volume alone would be sufficient. The Committee on disinfectants, it will be remembered, was composed of Drs. George M. Sternberg, Joseph H. Raymond, Charles Smart, Victor C. Vaughan A. R. Leeds, W. H. Watkins, and George H. Rohé.

The present volume contains the reports for the two years previous to 1887, which have already been noticed, and the report for 1887, which may in a certain way be regarded as an additional report with a summary of what is contained in the others. The report of the Chairman, Dr. Sternberg, is very full, as was to be expected. It is a

report of what he himself has done in the way of confirming the conclusions arrived at from work in former years. He discusses fully the data relating to the several disinfecting agents mentioned in the former reports. Former conclusions have been tested by experiments upon pure cultures of the various pathogenic and non-pathogenic bacteria available for this purpose. Elaborate and careful experiments have been made in regard to the thermal death-point of microorganisms, and conclusions drawn.

As to the single disinfectants, further experiments show that the high place at first given to chlorinated lime is fully justified; but Dr. Sternberg recommends that *Standard Solution No. 1* be made by adding 6 ounces of chloride of lime to the gallon of water, instead of 4 ounces. The results of the experiments of Dr. Meade Bolton, made for Dr. Sternberg, are in accord with those of Van Ermengern, and show that for disinfection of highly albuminous material the amount of mercuric chloride required will exceed that in the standard solutions (1:1500), formerly recommended by the Committee for sterilizing excreta. Preference is given to the chloride of lime solution for the disinfection of excreta. In regard to carbolic acid; a consideration of experimental data leads Dr. Sternberg to believe that carbolic acid possesses a decided advantage over mercuric chloride or over oxidizing disinfectants for the disinfection of masses of material to be left *in situ*, such as human excreta in privy vaults. This advantage is due to the fact that it is not decomposed nor neutralized by putrefying material, and that it will exercise its antiseptic action throughout the mass, even though it may not destroy spores or pathogenic organisms present. In the first report of the Committee sulphate of copper is recommended in a solution of 2 to 5 per cent. for the destruction of infectious material "*not containing spores.*" Dr. Sternberg now says that this proportion may be reduced to 1 per cent., except in the presence of a considerable amount of albumen, when the amount must be increased. Pure calcium oxide is found to have no great value for disinfecting purposes, but as it has considerable germicide power when used in the form of lime wash, especially after prolonged contact, its general use for sanitary purposes is to be recommended wherever it can be applied to surfaces supposed to be infected by disease germs.

The most complete paper on Ptomaines that has appeared in the English language is the one contributed to this report by Dr. Victor C. Vaughan. Following this are two very valuable articles, "Methods of Practical Disinfection," by Dr. George H. Rohé, and "The Quarantine System of Louisiana—Methods of Disinfection Practiced," by Dr. Joseph Holt. These papers are well and profusely illustrated. The conclusions in regard to disinfection and disinfectants will be published, for the information of our readers, in another department.

This report may be obtained from Dr. Irving A. Watson, Concord, N. H.

AN UNSEEMLY QUARREL.

In plate V of Hogarth's "Harlot's Progress" is presented the spectacle of two disciples of Æsculapius, who the commentator has the grace to insinuate are not regular, in a hot quarrel over a dying unfortunate, whom each charges the other with having poisoned. The scene points the moral that the doom is the pathetic rounding up of an evil career. Not a single character in this delineation shines with a reflected glory—all is dark, dismal and shuddering. There is a most woful want of all the proprieties, even down to the venal nurse despoiling a dilapidated trunk of its few valuables.

Now why should a magnanimous potentate, full of good-will to men, have been overtaken by the more cruel fate of a death made uneasy by domestic bickerings and court intrigues? Why should a noble profession, full of all beneficence, be besmirched by the quarrels of men oversensitive about a transitory glory, which might have been transferred by the will of the monarch upon the bragging professor of a cancer specific? Why should the "infallible" expounders of an art, who came to a diagnosis by the easy reading of a post-mortem backwards, have accentuated so-called snubs, while a desirable life was at stake?

"Not so happy—yet more happy," is the outcast Lazarus in a Home for Incurables who is allowed to die in peace behind a friendly screen, with no public peering in at the windows and awaiting the flight of a wailing soul.

DR. PAUL GIBIER has been charged with a communication to study yellow fever in the United States, and particularly in Florida.

EDITORIAL NOTES.

ETHER IN HEART FAILURE.—PROFESSOR VON BAMBERGER has recently recorded, in the *Wiener klinische Wochenschrift*, an interesting case showing the effect of ether in cardiac insufficiency. The case was that of a man who came under treatment about two years ago, and who was suffering from cardiac insufficiency due to fatty degeneration (but no cardiac failure), and from considerable dropsy, albuminuria, hepatic enlargement, dyspnœa, and continual insomnia. The patient, a man æt. 60, was directed to try the Oertel "cure" in the mountains, but the dyspnœa and other symptoms became so aggravated before the "mountain cure" was begun, that the physician in attendance tried the effect of injections of ether. The effect of these injections was that the secretion of urine, which other drugs and means had failed to increase, rose to several thousand cc. daily, and continued so for some time; at the same time the dropsy and the dyspnœa decreased. The patient was now able to undergo the Oertel "cure," under which progress was made, but some months later he died of apoplexy. Bamberger thinks it probable that the good effect of the ether in this case was due to its action on the kidneys; though it may have acted as a direct stimulant to the enfeebled heart.

THE COLOSTRUM CORPUSCLE OF HUMAN MILK.—DR. EDGAR BECKIT TRUMAN, of Nottingham, has made some investigations to ascertain the significance of the colostrum corpuscle, and to ascertain the usual condition of the breast milk three months after confinement. Medico-legists usually mention the presence of colostrum in milk as characteristic of recent delivery. Dr. Truman, from a study of a number of cases, comes to the conclusion that the colostrum corpuscle is no proof of recent delivery, or of delivery, say, within the previous three months. It is a sign of incomplete development of the products of the mammary gland, and in this way we may get it with retroflexion of the uterus, prolapse of the ovary, incomplete action of the glands, chronic ovaritis, cancer of the breast, and dyspareunia with laceration, in all which cases we get the irritative action of disease, instead of the normal healthy activity of the reproductive organs. In fact, the presence of the

corpuscle would tend to negative the supposition of a delivery followed by three months' suckling. The record of Dr. Truman's cases may be found in the *Lancet* of September 1, 1888.

THE PHYSICIAN—A NATURALIST.—In THE JOURNAL of September 15, attention was called to the address before the recent annual meeting of the British Medical Association, on this subject, by Dr. Gairdner. In the *Edinburgh Medical Journal*, of September, is a graduation address on this subject by PROFESSOR SIR WILLIAM TURNER, delivered on August 1, just a week before Dr. Gairdner's address was delivered. Sir William's address is somewhat on the same lines as Dr. Gairdner's, and it is certainly a coincidence that the two should have been delivered at almost the same time. Sir William Turner calls attention to the value of complete and accurate observation, to the great value of the study of the sciences, and to the contemplation of Nature in disease, by which the physician becomes inspired with a desire to penetrate the mysteries of life and organization, and to remove the healing art from the domain of conjecture and hypothesis, and plant it on the firm ground of science.

INTUBATION TUBES; THE ALLEN SURGICAL PUMP.—We are pleased to observe the favorable notice our English brethren gave two Chicago devices exhibited at the recent meeting of the British Medical Association. They deserved the attention. Dr. Waxham's paper on "Intubation of the Larynx" was very favorably received, as all who know him would have prophesied. His modifications of the intubation tubes were exhibited, as well as the methods and results of intubation described.

Mr. Truax was invited to exhibit the Allen Surgical Pump by several members of the Association who saw it at the International Congress and who subsequently used it. We learn from the *British Medical Journal*, the *Lancet*, the *Asclepiad*, and other English journals that it excited much notice, as it deserved to do. It is so simple and its uses so manifold, and its cost so reasonable, that it deserves the popularity that it has acquired in this country and, as we hope, now in England.

THE PHONOGRAPH FOR RECORDING PULMONARY AND CARDIAC SOUNDS.—During his vacation the past summer, DR. WILLIAM PORTER,

of St. Louis, Mo., says he used some of his time in experimenting with the phonograph for permanently registering the fac simile of any abnormal sound produced in the lungs and the heart. (See *Weekly Medical Review*). He says: "Not only are different voice sounds presented distinctly, but by attaching the ordinary stethoscope some of the cardiac sounds could be easily recognized after they had been recorded by the instrument." The most perfect result he obtained was from a case of *mitral insufficiency*. The subject is worthy of much careful investigation.

REMOVAL OF SUPERFLUOUS HAIRS BY ELECTROLYSIS.—This operation, which is not difficult, though requiring some practice, does not seem to be perfectly understood. A writer in the *British Medical Journal* says: An irido-platinum needle is commonly used, and is inserted along the sheath of the hair until it reaches the level of the root. It is most convenient in practice to use a strength that requires about 30 to 35 seconds to loosen the hair sufficiently so that it comes out without traction when taken hold of by the forceps. In dealing with hairs on the upper lip or on the chin of women, it is advisable to operate only on hairs that are strong and black. So long as the hairs are colorless, unless they are very thick and strong, they are better let alone.

DR. ABNER HAGAR, of Marengo, Ill., died at his home September 22, 1888, aged 73 years, and 8 months. He was one of the early and highly respected practitioners of medicine in the northern part of Illinois. He graduated from the Medical College of Geneva, New York, in 1841, and in the same year commenced the practice of his profession, first in Dundee, Ill., then in McHenry, and in 1843 moved to Marengo, where he continued to do a large practice until within a few years of his death.

HORSE-FLESH is said to be regularly exposed for sale in the butchers' shops in Liverpool, and the authorities do not interfere so long as the meat is sound in quality and is offered as horse-flesh. A case recently came up in Liverpool in which ill-smelling horse-flesh was offered for sale, and a witness said he killed one or two horses every week; certainly a surprising statement when one thinks how few horses that are unfit for work are suitable for food.

DR. W. W. IRELAND, the author of "The Blot upon the Brain," will shortly issue a gallery of eccentric or insane persons who have had much influence upon men. The list will include among others Swedenborg, Louis Riel, Guiteau, Theodore of Abyssinia, King Theebaw, and Malagrida.

DR WM. OSLER, Professor of Clinical Medicine in the University of Pennsylvania, has been elected Professor of Medicine in the Johns Hopkins University and Physician to the Hospital, Baltimore, Md. A very excellent appointment.

THE FIRST NUMBER of the *University Magazine*, has made its appearance, and is filled with interesting papers. It is published monthly, in the interest of the Medical Department of the University of Pennsylvania.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, September 26, 1888.

THE PRESIDENT, J. SOLIS COHEN, M.D.,
IN THE CHAIR.

DR. SAMUEL W. GROSS read the following paper on

THE TREATMENT OF CARCINOMA OF THE BREAST.

Of operations which do not rank with major procedures, not one is more commonly practiced by men not skilled in the manual of surgery than that of the removal of the mammary gland for carcinoma. The superficial situation of the organ, the ease with which hæmorrhage is controlled, the flaps are united, and the dressings applied, all tend to make partial or complete extirpation of the breast a tempting field for the young surgeon. If to these considerations be added the great frequency of the disease, it will be seen that its treatment should constitute an instructive topic for consideration and discussion by this body.

In accepting your invitation, Mr. President, to make the opening remarks upon the subject, I take it that a brief narration of my own personal experience will prove to be more interesting than were I to deal with the practice of others, the more especially as the operation which I have performed is more thorough than the usual procedure.

At the outset I will state that in the manage-

ment of so lethal an affection I have relied upon the scalpel, as I believe it to be the one and only measure which is capable of affording good results. It may be that some of my hearers are sceptical as to the propriety of interference. The old tradition that carcinoma is an outward evidence of a blood disorder, and that it cannot, consequently, be cured by operation, may still influence a few of our members. To these I may be permitted to say, first, that the leading minds of the world now admit that carcinoma is primarily a local growth; and, secondly, as I have elsewhere¹ conclusively shown, from an impartial examination of a large number of cases that the knife not only prevents the local dissemination of the disease, its extension to the lymphatic glands, and the occurrence of secondary growths in a large percentage of cases, but that it moreover prolongs life, and definitely cures one patient out of every eight and a half.

An operation in a suitable case having been decided upon, the one selected by the majority of surgeons is that with which we are all so familiar, namely, the inclusion of the nipple and a portion of the skin in two elliptical incisions, the reflection of the flaps, and the dissection of the gland from the surrounding tissues. Other surgeons, actuated by the desire to save as much of the gland as possible, limit their efforts to the extirpation of the tumor alone. The first of these procedures is faulty enough; the latter cannot be condemned in too severe terms; and yet, in his recent monograph on "The Operative Surgery of Malignant Disease," Butlin, I am sorry to say, recommends it. A knowledge of the changes which, starting from the tumor itself, ensue in the remainder of the breast, in the adjacent soft tissues, and in the associated lymphatic glands, which changes indicate the local extension of the disease along the lymph paths, ought surely to lead the surgeon to reject such irrational operations. In very exceptional instances a cure may be effected; but we all know what is the common result—a more or less rapid recurrence of the disease—a favorable issue being so uncommon after these incomplete operations that few, if any, of us have ever witnessed it.

Dissatisfaction with my own earlier results and those which I was enabled to follow in the practice of other surgeons led me, ten years ago, to adopt a radical procedure, the object being to effect riddance of all the tissues in which the experience of hundreds of years demonstrates that recurrence, or a new outbreak of the disease, takes place. Hence, in my operation, which is minutely described in the *American Journal of the Medical Sciences* for April, 1888, I amputate, by a circular cut, the entire breast with its overlying skin and fat, dissect off the pectoral fascia, and carry an incision into the axilla, through which I am en-

abled to extirpate its contents. If nodules should be found in the pectoral or intercostal muscles, they are also removed with an equally unsparing hand. The edges of the wounds are then approximated, the closure of the breast incision being greatly facilitated by raising the flaps from the subjacent tissue for $1\frac{1}{2}$ to 2 inches, and the employment of button sutures. In some cases, the wound cannot be entirely united, so that it has to heal by the process of granulation.

In the discussion which will follow the reading of my paper, I will doubtless be asked, first, Why do you remove the entire breast and its surrounding tissues? and secondly, Why do you attack the axilla in all cases? My answer is, simply because recurrence, or a new outbreak of the disease, ensues in tissues which are left behind in the less radical modes of operating. The accumulated observations of surgeons show that recurrence may be anticipated in the skin and subcutaneous tissues, especially at or near the cicatrice; in the fascia covering the pectoral muscles; in the remnant of the breast from which the tumor alone was excised; in outlying lobules which were overlooked during the performance of the less complete operations, and in the lymphatic glands, particularly those of the axilla.

Answering these questions more fully, I would say that sound pathology, as well as experience, demands that the entire mammary gland, along with its circumjacent tissues, should be amputated, first, because we have to deal with a carcinomatous degeneration commencing at one point from which the cells migrate in various directions into the remainder of the breast and the surrounding tissues, the extent of which migration into the lymphatics and their radicles it is impossible to determine with the naked eye; secondly, because the disease is sometimes multiple, and the smaller growths are only detected on examining the breast after its removal; thirdly, because minute lobules frequently lie at some distance from the main body of the gland, particularly toward the axilla and the clavicle, which may subsequently become the seat of a new outbreak, even as late as ten years, as in a remarkable instance recorded by Banks; and fourthly, because nodules may be found in the subcutaneous tissues at a relatively great distance from the breast, which would certainly have escaped detection in the lesser operations.

My answer to the second question, Why do you attack the axilla in every case? is, because the axillary glands are almost always diseased, even though they cannot be felt prior to operation. Of my 45 cases, the glands were not palpable in 18, but in 15 of these they were present when the axillary space was opened. In 57 out of 65 similar cases, Kuester found that the glands were infected, so that our combined experience demonstrates that the glands are invaded in 86 out of every 100 cases in which there is no ex-

¹ *American Journal of the Medical Sciences* for April, 1888.

ternal evidence of their implication. Hence, if the axilla be not evacuated of its contents in every case, a subsequent operation will almost surely be demanded. In point of fact, I consider this step as the keynote of the procedure, and I refuse to operate if I am not permitted to have my own way in this regard.

Although the procedure which I have described may appear to be unnecessarily severe as to the sacrifice of tissue and, at first sight, seem to be attended with more risk than operations performed with a more sparing hand, I have still to present some facts which conclusively show that it is the best that has as yet been practiced as regards mortality, freedom from local recurrence, and a final cure.

Of my 45 cases, 2, or 4.44 per cent., perished from the operation, and 5 patients were lost sight of after recovery. Deducting the 7 that died and could not be traced, 38 cases show local recurrence in 11, or 28.95 per cent. Including the deaths, out of 40 cases, 9, or 22.5 per cent., recovered. Of these, 1 died of an intercurrent disease in 7 years and 10 months, while the remainder are still doing well, 1 for 9 years and 10 months, 1 for 9 years and 1 month, 1 for 6 years and 9 months, 1 for 4 years and 3 months, 1 for 3 years and 11 months, 2 for 3 years and 6 months, and 1 for 3 years and 5 days.

Let us contrast these results with those afforded by the next best operation, namely, the removal of the breast by flaps and the evacuation of the contents of the axilla in every case. Of 328 cases of this description in the hands of Banks, Kuester and von Bergmann, 10.67 per cent. perished, there was local recurrence in 54.92 per cent., and 15.15 per cent. were cured, so that my operation is safer by 6.23 per cent., is less liable to local recurrence by 25.97 per cent., and affords 7.35 per cent. more of permanent recoveries.

It is quite certain that the greater immunity from local reproduction of the disease in my operation is due to the total amputation of the breast, its skin, and enveloping fat. Despite the fact that my results are better than any that have heretofore been recorded, a careful examination of the cases of Banks shows that he met with only 3.88 per cent. more of recurrences than I have, and that his percentage of recoveries, viz., 20.77, is only 1.73 per cent. less than my own. Hence, I felt that I might possibly have sacrificed too much of the skin; and, since June, 1887, I have so far modified my operation in 10 cases, the skin in none being apparently affected, as to save enough of that structure to admit of nice approximation of the edges of the wound. All recovered from the operation; one died from recurrence in the axilla and metastasis, one is living with axillary reproduction; in not one has there been local reproduction; one patient is free from disease at the end of fifteen months; one for one

year; one for nine months; and the remainder for periods varying between three and eight months. These cases can be followed, and whenever I am sure of being able to trace my patients, I shall give this procedure a fair trial. When, on the other hand, the patient lives at a great distance, or her circumstances are such as to prevent her visiting me in the event of recurrence, I will adhere to the more extensive operation.

DR. JAMES COLLINS: I have on two or three occasions, in the case of small tumors in comparatively young women, allowed myself to be over-ruled by the patient and her friends, who urged that it would be a pity to sacrifice so much of the breast as I proposed, to performing a restricted operation; but I have regretted it in every instance, and I can assure Prof. Gross that I will never offend again. That which Dr. Gross describes as the "second-best operation," the large elliptical incision with thorough removal of tissues beneath the skin and exploration of the axilla is the one I have practiced in the majority of my cases. The prolongation of life in those I have been able to follow would average not quite three years.

The great difficulty we have to contend with in mammary tumors is to secure consent to an early operation. Patients go from surgeon to surgeon, and from city to city, and finally yield consent as a last resort or in deference to an authoritative opinion; usually too late to escape recurrence. The recurrence which then takes place, despite skilful operation by a distinguished hand, will be cited in discouragement of timely operation in other cases, by a large circle of relatives and friends.

The exploration of the axilla, which the lecturer in his masterly demonstration has so justly emphasized, should never be omitted. Nor is it too trite a remark to recall that antiseptic methods, which have so improved the results of extended operations, should here also remove any lingering dread of opening up large spaces; for they have improved the outlook of the procedure by assisting the rapidity of healing, and excluding the danger of septic accidents and sequelæ.

DR. O. H. ALLIS: I have nothing to add in discussion; I have repeatedly seen Prof. Gross operate, and there is one point in his method of operation to which I would call especial attention. The breast having been covered for twenty-four hours with antiseptic solutions and his hands being thoroughly aseptic, he carefully palpates the pectoral region for outlying nodules, marking the site of any that he finds with a pencil-stroke, and when he operates he does not dissect out these places, but includes them well within the sweep of the line of incision. In other words, he cuts beyond the outer limits of the disease.

DR. JOHN B. ROBERTS: Dr. Gross has for

many years taught us all the proper way to remove a breast, that is, to remove it thoroughly. In my own operations, I have, whenever possible, employed the large elliptical incision; the advantage, and I confess the only one, being that when approximation of the edges of the wound is at all possible, it can by this method be more readily effected. No one who has learned from Prof. Gross the proper way to open the axilla would dare to neglect this portion of the operation. As to aseptic and antiseptic methods, there can be no difference of opinion among experienced operators; they are the only methods permissible in operative surgery. I would like to ask Dr. Gross how long it takes to repair one of the large spaces in what he calls the dinner-plate incision, and what his opinion would be as to the prospects of a plastic operation to aid in hastening healing.

DR. R. BRUCE BURNS: Of all surgical cases these are the most unsatisfactory. In my earliest operations I did not open the axilla. Three cases operated on in this way are living for eleven, nine, and five years respectively. Of later years I have opened the axilla, and have been unfortunate. Recurrence has taken place in the cicatrices and even in the axillary tissues, perhaps in small glands not removed. I have thought, perhaps, it recurred in the adipose tissues. I have usually employed the elliptical incision. The method of leaving a large open wound to heal by granulation is rather hazardous. In all cases where I have had to depend upon extensive granulation there has been rapid recurrence and metastasis. There may also be limitation of the movements of the arm from matting of the tissues. It is wise always to attempt to secure union by first intention. It would be well to attempt to remove outlying nodules in the surrounding tissues. Where nodules occupy a portion of the gland (mammary) and are intimately attached to it, the whole organ should be removed.

Antiseptic measures are only so far useful as, in arranging them, you secure aseptic conditions. I believe thorough cleanliness in all respects, as to instruments, dressings, and the surgeon's hands, with good drainage, is all that is necessary in the treatment of the wounds of operations.

DR. GROSS, in closing the discussion, said: There are many points which might have been touched upon in the paper which I omitted for the sake of brevity. Societies do not like to listen to long papers, and the best speakers teach little in long papers. The points I have tried to emphasize are, the importance of a thorough operation, and the fact that its results are better than those of incomplete operations.

Now as to primary union. Of course, I want to get primary union whenever I can. Those who have never seen my operation would be surprised to see how close an approximation we can

get by sliding the bistoury under the skin, say for from one to two inches, and then drawing the loosened flaps together with buttoned sutures.

Sometimes when there has been very extensive disease, necessitating correspondingly extensive operation, we have a gap left to granulate of two or three fingers' breadth—never more than three fingers' breadth. Healing may be slow in a debilitated subject with a large wound, but averages about six weeks.

Now as to saving the breast, and only removing the tumor itself—I do not care for the breast. It is of no use. I am concerned in getting rid of all diseased tissues. What surgeon would undertake to remove a sarcoma of the thigh, for example, and for the sake of leaving a little more stump, make his flaps through infiltrated tissue? I should consider such a procedure criminal. Yet it is just what some surgeons want us to do in the breast.

In my last ten cases I did, for reasons stated in the paper, the lesser operation, and if I find it equally satisfactory in the end, I will adopt it altogether. I am not wedded to one operation, only so far as not only personal experience, but the combined statistics of several operators with good results show that my operation has given the best results.

Dr. Burns has had an experience of coincidences. In the cases in which he did not open the axilla and recovery took place, he had a free axilla. I judge that the doctor thinks recurrence takes place in granulations. Now it is a histological fact that granulation tissue will give rise to granulation tissue alone, and not to epithelial tissue. The granulating surface may be great or small; that has nothing at all to do with recurrence. In those other cases all the disease was not removed, and hence development again took place in the tissues forming the bond of union, or the tissues near the cicatrice.

As to aseptic surgery, I can only say that if anyone has been taught the modern methods and neglects them, and death occurs from erysipelas, pyæmia or septic complication, he cannot be held irresponsible.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Communication of the Amniotic Liquor and Maternal Blood—Clinical Urology of Small-pox—Relation of Ophthalmic and Dental Disorders—Time for administering Certain Drugs.

In a note in the *Archives de Tocology* on the communication of the amniotic liquid and the maternal blood Dr. Törngren remarks that the

former experiments of Gusserow, Fehling and Quinquaud had clearly established that soluble substances introduced into the circulation of the mother entered the ovum. Experiments were equally performed by Savory, Gusserow, Preyer and Bar in the opposite sense, to establish the passage in the "matrpetal" direction. But how the substances injected into the amniotic liquid returned in the maternal circulation was a point not very clearly elucidated, and it is this that Dr. Törngren endeavored to establish in his experimental work executed under the direction of Professor Strauss. He was able to establish, with Drs. Bar and Haidlen, that an absorption by the mother certainly took place of substances contained in the liquid of the amnios. As regards the channel followed for this absorption, the results are not absolutely decisive. Contrary to Schultze, Dr. Törngren, however, thinks that the absorption is not effected by the medium of the fetal organism (the child taking in in the first instance by deglutition the amniotic liquid), but principally by the placenta or the membranes. These experimental facts, observed in the rabbit, found their analogies in the anatomical researches made by Winkler on the placenta of the human female. He established that in the placental portion of the chorion and of the amnios canalicules exist which communicate with the amniotic cavity.

Dr. Robin has lately made a very interesting communication to the Academy of Medicine on the clinical urology of small-pox, a question which had never been treated in a systematic manner. The researches of Dr. Robin have led him to establish in small-pox four varieties of albuminuria: 1. Prevariolic albuminuria, occurring before the eruption. It is grave when it is abundant. Only one case of the kind has ever been known. 2. Transitory albuminuria. This is a little marked and shows itself at the outset of the eruption and of suppuration. It is of no diagnostic or prognostic value. 3. Abundant albuminuria, coming on at any period of the acute stage. This is rare and of a grave prognosis. 4. Albuminuria of convalescence, which should be divided into two varieties. The first accompanies or precedes the febrile returns of convalescence, or a tardy complication: abscess, parotiditis, etc. It is transitory, little abundant and without serious prognosis. The second is analogous to post-scarlatinal albuminuria and, like this, proceeds from a particular form of nephritis termed variolic nephritis, the anatomo-pathological characters of which have been lately studied by M. S. Renaut, of Lyons. The pathogenic conditions which favor the appearance of albuminuria are still rather obscure. The examination of the greater part of observations published leads to this eclectic conclusion, that the two principal predisposing factors of secondary variolic albuminuria are the intensity of the malady on the one hand, and the bad gen-

eral condition of the patient on the other. As to the exciting cause, it is not precise in any case outside common cold, which figures in all the etiologies. To impute it to parasitism is evidently that which is the most rational in the present state of our knowledge.

In a lecture on the relation of ophthalmic to dental disorders, Dr. Galezowski, the well-known ophthalmologist, dwelt on the close correlation between some eye troubles and caries of the upper teeth. In young children, the slight inflammation and discomforts accompanying the cutting of the first teeth produce keratitis and small corneal ulcers, and these can sometimes be cured by treatment of the teeth. In the shedding of the first teeth a spasm of the eyelids is sometimes observed, which can be removed by extracting the teeth. With the shedding of the wisdom teeth corneal inflammations occur. In adults, the commonest result of dental caries on the eyes is a weakening of accommodation by reflex action through the fifth pair of nerves. Of this the author gives two examples. An American lawyer had had for two years such weakness of accommodation as to make his work almost impossible. There was no hypermetropia or astigmatism, but two of the molars of the upper jaw were decayed and stopped with gold. Dr. Galezowski advised their extraction, and in a few days his patient was able to resume his work. From this it was concluded that the patient's troubles arose from compression of the dental nerve. In another case in which the weakness had lasted for three years, it improved greatly soon after the extraction of a single molar. There was also a case of temporary but almost complete functional blindness following extraction of an upper molar in a man aged 20, who was under the care of Professor Richet at the Hôtel Dieu. Conversely, in a nervous woman, a patient of Galezowski, who had amaurosis of one eye, perfect sight was immediately recovered by removal of a carious molar tooth on the same side.

The *Revue Internationale* has published a note on the proper time for the administration of certain drugs. The alkalies should be taken before meals. Iodine and its derivatives should be taken when the stomach is empty, they are then more rapidly diffused in the blood. During digestion they are decomposed by the acids and starch, and consequently lose their properties. Acids should be administered between meals; if the gastric juice is very acid, they should be taken immediately before meals. Irritant or dangerous substances such as arsenic, copper, zinc, iron, etc., should be taken before meals. The nitrate of silver should be administered before meals. Corrosive sublimate and the greater part of metallic salts should be taken when the stomach is empty. The extract of malt, cod-liver oil, and the phosphates are administered preferably during meals or immediately after.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM AN OCCASIONAL CORRESPONDENT.)

New York State Medical Association—Puerperal Septicæmia—Are Puerperal Febrile Disturbances due to Microorganisms—The Etiology of Puerperal Fever—Conditions Predisposing to Puerperal Septicæmia—Pathology of Puerperal Septicæmia.

The recent meeting of the New York State Medical Association, which was held at the Hotel Brunswick, October 9, 10 and 11, was a very successful and attractive one. The attendance was somewhat larger than last year, and the banquet on the evening of the second day was a most enjoyable affair. Professor William T. Lusk, of Bellevue Hospital Medical College, was elected President, and Drs. Ferguson and Hinton were, of course, reelected Secretary and Treasurer. The Vice-Presidents chosen were as follows: First District, Dr. S. H. French, of Montgomery Co.; Second District, Dr. R. C. McEwen, of Saratoga Co.; Third District, Dr. Elias Lester, of Seneca Co.; Fourth District, Dr. T. D. Strong, of Chautauqua Co.

The elaborate programme, that has already been published in THE JOURNAL, was faithfully carried out, and, as in previous years, the set discussions on subjects of general scientific interest were the main feature of the session. Probably the most entertaining contribution was the address on Medicine, by Dr. Shrady, who took for his subject, "Medical New York in 1800."

The discussion on *Puerperal Septicæmia* was introduced by Dr. C. C. Frederick, of Buffalo, who stated that as the danger of infection in any case was in direct proportion to the avenues of approach left open for the invasion of sepsis, the importance of prophylaxis was evident. The strictest antiseptic precautions, he thought, should be observed in every case of labor, and among the measures that he advocated was the use of a vaginal douche of bichloride solution (1 to 3,000) before delivery. The placenta should always be removed with the patient on her back, in order to prevent the ingress of air which was likely to take place if she was in Sim's position. After delivery the perineum should be examined, and sutures applied if there was any rupture. If for any reason it was necessary to introduce the hand into the uterus, an intra-uterine injection of bichloride solution (1 to 4,000) should be subsequently employed. He advocated the use of the antiseptic pad, and thought post-partum vaginal injections were unnecessary. When the bowels or bladder were evacuated the patient should be raised to the upright position, in order to drain the uterus and vagina.

As regards the prognosis of puerperal fever, he said that the purely septic forms were the most

dangerous, unless the conditions were promptly and thoroughly treated. When septic germs had once gained entrance into the blood and the lymphatics they were beyond the reach of the physician; but further infection could usually be prevented, and if the patient's strength could be kept up, the hope might be entertained that the poison would be eliminated from the system. He regarded putrid lochia as one of the most potent causes of sepsis.

When septicæmia declared itself vaginal injections of bichloride solution (1 to 2,000) should be employed at intervals of from three to six hours, according to the urgency of the symptoms; and after the use of the douche the patient should be required to sit upright for a moment, so as to drain the parts. All necrosed patches in the genital canal should be touched with a mixture of persulphate of iron solution and compound tincture of iodine, as recommended by Lusk, and if there are any diphtheritic patches, the chloride of zinc should be employed, as advocated by Garrigues. Dr. Frederick thought it probable that the intra-uterine douche had been resorted to too frequently, and that the real benefit in most of the cases when it was used resulted from vaginal irrigation. Among the dangers likely to arise from this practice was one that had been overlooked, viz., that of conveying septic material from the vagina into the cavity of the uterus. If the intra-uterine douche were deemed necessary, the patient should be placed in the lithotomy position, and from one to three pints of bichloride solution (1 to 4,000) carefully injected. Afterwards the uterus should be squeezed dry, a pencil of iodoform inserted into its cavity, and a dose of ergot administered to insure contraction. In controlling high temperature antipyrin, and preferably antifebrin, was frequently of service.

The first question propounded, *What facts can be cited in support of the doctrine that the puerperal febrile diseases owe their origin to the action of microorganisms?* was discussed by Dr. H. M. Biggs, of New York. He said that the natural resistance of the tissues must first be overcome before septic germs could obtain an entrance, and in the normal parturient woman the lochial discharge and the abundant secretions of the parts continually protected the wounded surfaces. The uterus was also kept tightly closed by its own contractions, and the epithelium of its cavity occluded its orifices with an impenetrable shield. If, however, anything occurred to diminish the quantity of the lochia—if the uterus did not contract properly, if the vital resistance of the tissues are reduced by depressing influences of any kind, or if portions of membrane or blood-clot were retained in the uterus, and if under any of these circumstances microbes were introduced, it was evident that the most favorable conditions for the development of puerperal septicæmia were present.

With these points in view, it was easy to understand how the use of antiseptic precautions was so efficient in preventing this condition. If, in the first place, an antiseptic vaginal douche was employed during and immediately after labor, and if, in the second place, an antiseptic dressing were kept applied after delivery, impaction was much less likely to occur than if these measures were not resorted to, and if it did occur, it was apt to do so at a later period, when a better opportunity was afforded for counteracting its effects. The different conditions met with in different cases explained the various forms of puerperal septicæmia met with. After death pyogenic organisms had been met with in the milk-glands, in the lymphatics, and in the various organs throughout the body, and it had been demonstrated that they were eliminated during life by the kidneys and other emunctories. The *streptococcus pyogenes* was found in a large number of cases, and it was probable that this microbe was identical with the *streptococcus* of erysipelas. The next most common bacillus met with was the *staphylococcus*, the ordinary microbe of suppuration.

The puerperal febrile diseases were, therefore, a class of affections closely allied to infectious surgical diseases. The bacilli of the latter were known to be capable of producing all the conditions met with in puerperal septicæmia. The abolition of the latter from maternity hospitals constituted one of the most remarkable chapters in the history of bacteriology, and hence the conclusion could not be avoided that these diseases were of bacterial origin.

The second question was, *Is there a specific febrile disease peculiar to the puerperal woman, or are the various forms of puerperal fever the result of septic or putrid infection similar to or identical with that familiar to surgeons as septicæmia? What etiological relations exist between the zymotic diseases and some forms of puerperal febrile diseases, and in what manner are the zymotic modified by implantation upon the puerperal state?* It was discussed by Drs. E. D. Ferguson, of Troy, and S. B. W. McLeod, of New York. Dr. Ferguson said that he had no hesitation in answering the first part of this question in the negative. In our present state of knowledge the theory that puerperal fever is a specific disease seems no longer tenable, and at the last important discussion on the subject in this country, viz.: that before the New York Academy of Medicine in the winter of 1883-4, the only participant who advocated the specific character of the affection was Dr. Fordyce Barker. When fever occurred *ante-partum*, as was undoubtedly occasionally the case, it was more reasonable to suppose that it was due to some of the causes which might give rise to pyrexia at any time, rather than to a specific puerperal fever without any anatomical basis.

As regards the second part of the question, he said it could be shown that pregnancy did not afford immunity from any of the zymotic diseases. It was necessary to distinguish between those cases in which the zymotic disease complicated the puerperal fever, and those in which the zymotic infection gave rise to the puerperal fever. With regard to diphtheria, he desired to enter a protest against regarding every case of membranous exudation as one of true diphtheria. The zymotic diseases were apt to be more or less modified by implantation on the puerperal state, and the mortality was often increased, especially when pelvic inflammation was present. The diminution of the red corpuscles and the increase of fibrin in the blood resulting from pregnancy might perhaps explain to some extent the greater severity of the zymotics, as a rule, in parturient women. In cholera, however, the mortality was apparently not increased in pregnant women. Small-pox was noted for its mortality in this class, the death-rate ranging from 20 to 40 per cent. It frequently caused abortion, which was apt to be followed by the death of the patient; and the same was true of scarlatina and measles. The relation between erysipelas and puerperal fever had long been well known. This disease was not so fatal, however, if care was taken to avoid infection of the genital tract.

Dr. McLeod said in the course of his remarks that it might in general be stated that puerperal fever was a complex disease, depending on a variety of causes, although dependent in most cases on surgical septicæmia. The test of treatment, as shown by the remarkable success of antiseptic midwifery, conclusively proved this.

Drs. F. W. Ross, of Elmira, and John Shrady, of New York, discussed question 3: *What conditions of the woman predispose to the development of puerperal septicæmia? To what extent are the accidents of childbirth, together with the manipulations of the accoucheur, to be considered as etiological factors in puerperal infection? Are there any antiseptic measures before, at, or after labor, under any and all conditions or complications, that may be relied upon as prophylactic to puerperal septicæmia?* Dr. Ross said that no iron-clad rules could be laid down for prophylactic treatment, but the observance of certain measures, with due regard to the condition and surroundings of the patient, would, in general, be of service. In the first place, the woman should be placed in the most perfect health attainable, both general and local, before her confinement. At the time of labor she should have plenty of pure air, and all things about her should be scrupulously clean; efficient antiseptic solutions being employed to secure this end. If the perineum were ruptured, either sutures should be put in or antiseptic protection afforded to the parts. Antiseptic injections might be judiciously used, if called for, before, during or after labor.

Dr. Shrady said that one of the most important predisposing conditions was a lowered vital tone; and this view was supported by the bacterial origin hypothesis, because it was well known that healthy tissue constitutes the great barrier against microbic infection. The primary channel of infection was the genital tract, and experience had taught the advisability of making infrequent vaginal examinations.

The question, *What is the pathology of each of the several forms of puerperal septicæmia? What conditions or circumstances incident to puerperal septicæmia, and what forms of the disease, tend to render it fatal?* was discussed by Dr. Frank Graaer, of the Carnegie Laboratory. Drs. Wm. T. Lusk, of New York, and R. L. Banta, of Buffalo, discussed the last question, which was as follows: *What plan of antiseptic treatment can be employed with a large degree of success in each of the several forms of the disease? Does every rise of temperature above 100° F. in the puerperal woman constitute an indication for immediate resort to irrigation? When should irrigation be intra-vaginal and when intra-uterine? When irrigation is employed, how often should it be done, and when should it be discontinued? What hygienic, medicinal and dietetic treatment is to be used, in addition to the local antiseptic measures? To what extent should alcoholic stimulants and antipyretics be used?*

Dr. Lusk said that in the midwifery of the future there was reason to believe that there would be no occasion whatever to discuss the treatment of puerperal septicæmia. In his opinion this condition ought never to follow a properly conducted labor. In the Emergency Hospital in New York, where the number of confinements averaged 220 annually, the mortality from puerperal septicæmia had been reduced to *nil*, and it was actually the case at the present day that the women confined in lying-in institutions fared better as regards this affection than private patients surrounded by all the aids that wealth can command. The very fact that a place was given to such a discussion as this on the programme of the Association, showed, indeed, that the necessity and efficacy of preventive treatment were not yet as fully appreciated by the profession at large as they ought to be; and he could not but believe that one reason why this was so was because that when antiseptic prophylaxis first came in vogue it was taught that the removal of the carpet, upholstery, etc., from the chamber, and other such extreme measures, were required, and the difficulty of carrying out such a plan of procedure, which was altogether unnecessary, had proved a stumbling-block to many practitioners.

In the first place, both the physician and the nurses should understand the necessity of surgical cleanliness, and soap and water and corrosive sublimate be the means by which this could best be obtained. The hands and forearms should be

washed with bichloride solution, just as if laparotomy were to be performed, and the patient's genitals, abdomen and thighs should also be bathed with it. Vaginal injections with the bichloride solution during labor are a valuable safeguard against self-infection. All unnecessary manipulations, such as attempts to dilate the cervix with the fingers, should be avoided. The complete removal of all the membranes should be carefully looked to in the third stage of labor, and Dr. Lusk said that in order to secure this he always employed a strong light so that he could readily see what he was doing. If it was necessary at any time to introduce the hand into the uterus the cavity should be afterwards washed out with a solution of carbolic acid.

To prevent germs from entering the tissues to dangerous extent, nothing, he said, would seem, at first sight, so efficient as irrigation; but uterine irrigation was not devoid of risk, and this method of procedure really left out of account the great bulk of puerperal inflammations. Experience had shown that if the uterine douche were employed regularly at four hours intervals the mortality would be considerable. It was a point worthy of note that a rise of temperature did not constitute at all the indication for a resort to uterine irrigation. The true indication was a large, flabby uterus, with retained membranes, portions of placenta, or blood-clots.

In using the uterine douche a glass tube was preferable, and carbolic acid solution was the most satisfactory fluid for the purpose. It should be preceded by a vaginal douche, and the quantity of fluid employed should not be large—never exceeding two quarts. The stream should be continuous, and not interrupted. It was important that a free exit for the fluid should be secured, and after the douche had been finished pressure should be made upon the uterus to facilitate contraction and the expulsion of any of the solution that might remain in the organ. He had found it a good plan to have a pencil containing a drachm and a half of iodoform in the cavity of the uterus. The mistake was often made of resorting to the uterine douche too frequently. It was his practice to give a second douche at the end of twelve hours, if it was required; but a third was rarely needed. Dr. Lusk stated that he still had faith in the efficacy of the vaginal douche in almost all the varieties of puerperal fever, as it certainly promoted uterine contraction, and was generally very agreeable to the patient.

In every case of increased temperature after parturition the first thing to do was to make a careful examination of the vulva and vagina, and if ulcerations were found to apply caustic. The use of ice-bags on the pelvic region was generally of service. The chief danger in puerperal septicæmia was from weakness of the heart's action, and this was to be counteracted by alcoholic stim-

ulus, abundant liquid food, and such agents as strophanthus. In all cases of fever following parturition suitable nourishment and alcohol were indispensable. The most careful attention to the hygienic surroundings of the patient was, of course, called for. In the severest cases the ice-coil was undoubtedly useful, and Runge had recently reported very favorable results from the employment of tepid water in lymphatic septiciæmia. These results were the more remarkable from the fact that this was the most fatal variety of puerperal fever, and the method was certainly worth trying.

P. B. P.

The Acid Treatment of Yellow Fever and other Fevers, and Scorbutic Conditions Generally.

Dear Sir:—In view of the ravages of yellow fever in the South and elsewhere, it is the bounden duty of physicians to resort to all promising means of relief to prevent and stay its destructive course, and for this purpose I desire to invite attention again to the great value of the acids and acidulous substances in the hygienic and medicinal treatment of all such diseases, and particularly to the superior sanative properties of nitro-hydrochloric acid as a germicide, antiseptic, febrifuge, alterative, hæmostatic, tonic, etc., in contagious, infectious and pernicious fevers, as well as analogous diseases, both internally and externally, as a prophylactic and curative. I can truly testify to the great practical utility of nitro-hydrochloric acid in inflamed and festering throat, diphtheria, scarlet, variolous, puerperal, typhus, ship, malarial, bilious, and other fevers, with their allied toxic, putrid and scorbutic conditions, constitutional and local, but have had no practical experience with it in yellow fever, though I believe it will prove equally efficient therein as in the former. For a general summary of its medical properties and applications I refer to my previous article thereon, in *THE JOURNAL*, vol. x, p. 65.

Both as a preventive and remedial agent nitromuriatic acid is very efficacious in all such diseases, and may be taken freely in doses of from two to four drops of the strong acid in water or lemonade, through a glass, straw, or other non-corrosive tube, except in edentulous children and adults, by draught or sipping a little at a time, as a refreshing, purifying beverage and healing medicine, according to necessity. It is simple, safe, properly diluted, prompt, active, cheap, and easily procurable almost everywhere. It will not interfere with the usual remedies except in the case of calomel, which it converts into corrosive sublimate, and would thus prove dangerous in undue quantities, but in small doses beneficial, as it is compatible with hydrarg. bichloride, which might be substituted for the calomel, it being also

a powerful germicide, alterative and resolvent, and the two together would be doubly remedial.

Other acids, mineral, vegetal and animal, as muriatic, nitric, sulphuric, bromohydric, phosphoric, salicylic, etc., and lemonade, vinegar, sour buttermilk, with acid fluids, fruit, and food generally, sweetened to taste, are also applicable according to special indications. I firmly believe that the acid regimen and medication will greatly mitigate if not absolutely avert and resolve the scourge of yellow fever, with all other contagious, infectious, and pernicious fevers, and scorbutic conditions, hence strongly urge their use therein, both for preventive and curative purposes.

GEO. J. ZIEGLER, M.D.

Philadelphia, Sept. 30, 1888.

Abortion Laws.

Dear Sir:—In your most able and kindly editorial on "The Ethics of Marriage," in *THE JOURNAL* for September 1, there has, in some way which I cannot understand, crept in a mistake as to the abortion laws referred to in the tabular view in the appendix. I notice that a correspondent in your issue of September 22 naturally feels aggrieved at the seeming aspersion on his State.

This tabular view shows that thirty-eight States and Territories punish the attempt to perform abortion, and no less than eighteen punish advertisements looking to that end. The book has already—since May—passed into a second edition, and at first I thought the tables might have become confused in this, but, referring to a copy lately received from the publishers, I find them all right.

Will you kindly make correction in some future issue of *THE JOURNAL*, and greatly oblige Yours truly,

H. STERLING POMEROY, M.D.

341 Boylston St., Boston, October 12.

BOOK REVIEWS.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, at the Thirtieth Annual Session, held at Philadelphia, June, 1888. Published by the Society. 8vo, pp. 355.

The first literary contribution to this volume is the Presidential Address of Dr. Richard J. Levis, on "Traditional Errors of Surgery." Among the traditional errors pointed out are those pertaining to the differentiations of surgical practice called specialism. "The greatest advances in surgical science and art, at the present time, are made through special attention to certain lines of study and practice. This differentiation by specialism is justified by the advance of these lines beyond the possibility of any indi-

vidual practitioner ever comprehending all that can be known in them." Specialism must be intelligently guarded, however. It is a superstructure that must be built on a substantial generalism. As Virchow has said: "No specialty can flourish which separates itself from the common source of science. The great specialists, whose labors have borne most fruit, and added most to the stock of human knowledge, have been the men with a solid foundation of generalism. Dr. Levis recognizes this, and points out that the great danger of specialism lies in *exclusivism*—the study of and practice on distinct organs of the body without reference to their mutual and intimate relations and interdependence.

Dr. Levis then refers to the violent opposition to anæsthesia in 1846, to the denunciation of ovariectomy and ovariectomists, to the tardy recognition of Lister's principles of antiseptic surgery, and to the general tendency to make complicated surgical instruments and apparatus.

The addresses in medicine, by Dr. Edward R. Mayer, of Wilkesbarre, in Hygiene by Dr. Traill Green, of Easton, in Obstetrics by Dr. Parvin, in Mental Disorders by Dr. H. C. Wood, and in Otology by Dr. Alexander Randall, are well worth reading.

Dr. Frank Woodbury contributes a paper on "The effervescent form for the administration of certain remedies;" Dr. R. Lowry Sibbet one on "Decisions of the Courts relating to the Registration Act of 1881," in which he urges the necessity of a State Board of Medical Examiners. "The Proposed State Board of Medical Examiners" is the title of a paper by Dr. John H. Packard. Dr. Lawrence F. Flick contributes an admirable paper on "The Contagiousness of Phthisis," though we may not be prepared to accept his conclusions. A very interesting paper is one by Dr. Hugh Hamilton, on "The Chemical Factor in Disease." Dr. Mordecai Price has a short paper on "Removal of the Kidney for Traumatism," and Dr. John B. Deaver one on "Nephrectomy for New Growths." Dr. S. F. Davis makes an interesting report of a case of *removal of the uterine appendages as a remedial measure*. Dr. J. H. Musser read a memorandum of the life and works of Benjamin Rush. Dr. William F. Waugh read a paper on the "Specific Treatment of Typhoid Fever"—by sulphocarbolate of zinc, the use of which he believes is a legitimate deduction from the pathology of the disease.

Dr. Thomas D. Dunn read a paper on "The Hypodermic Use of Cocaine in Migraine and Bronchial Asthma," Dr. E. A. Wood, of Pittsburgh, one on the "Irrational Use of Commercial Pepsin," Dr. J. Chris. Lange, of Pittsburgh, one on "Some Influences of Diseases upon the Mind," Dr. Louis J. Lautenbach one on the "Prevention

of Ear Disease, by Care exercised particularly in Childhood," Dr. Charles H. Burnett one on "Aural Vertigo," one on "Gouty Sore Throat" by Dr. Harrison Allen, Dr. A. G. Heyl one on "Two Retinal Symptoms in Brain Disease," and Dr. Chas. M. Dulles made a "Report on Hydrophobia."

The Pennsylvania State Society has just grounds for pride on account of the unusual excellence of the papers in this volume.

The Physicians' Leisure Library. **THE INFECTIOUS DISEASES.** By CARL LIEBERMEISTER, Professor of Clinical Medicine in Tübingen, Germany. Translated by E. P. HURD, M.D., Newburyport, Mass. With Notes and Appendices. Small 8vo, 2 vols., paper, pp. 141, 269, Detroit: Geo. S. Davis. Chicago: W. T. Keener. Price, 25 cts. each.

Dr. Hurd has contributed in no small degree towards bringing the writings and teachings of foreign medical men within the reach of Americans that do not read a foreign language, and his work has the peculiar merit of instructing the reader without allowing him to be aware that he has a translation.

The first volume of the work before us deals with the miasmatic and miasmatic contagious diseases; intermittent fever and typhoid fever. It should be said that the scope of the work is "The Pathology and Treatment of Infectious Diseases." Every one that has read anything from Liebermeister's pen knows that he is one of the strongest adherents to the germ theory of disease. To prevent making the present volumes too bulky the translator has omitted Liebermeister's chapter—a long one—on the nature of infection. In his appendix to the chapter on Malaria Dr. Hurd has wisely added some notes setting forth the treatment of intermittent fevers as practiced in this country; and as appendices to the treatment of typhoid fever he has made some notes in regard to the cold-bath treatment of typhoid fever, and has added a summary of the treatment of this disease in some of the principal American Hospitals.

The second volume deals with measles, scarlatina, smallpox, vaccinia, varicella, rubella, diphtheria. Dr. Hurd has also added to the value of this volume by notes.

On the whole one must commend this work from the pen of one of the masters of medicine, and so intelligently edited.

OPHTHALMIC SURGERY. By ROBERT BRUDENELL CARTER, F.R.C.S., etc., and WILLIAM ADAMS FROST, F.R.C.S., etc. With a chromo-lithograph and 91 engravings. 8vo, pp. 554. Philadelphia: Lea Brothers & Co. 1888. Chicago: A. C. McClurg & Co.

The authors have divided their book into fifteen chapters. The first deals with the anatomy and

physiology, the second with the examination of the eye. The other chapters are devoted to the affections of the various tissues of the globe and its adnexia. An appendix contains Snellen's Distance Types, Reading Types, Army and Navy Test Dots and Formulæ.

The book is well written. It is concise and abreast of the times. Drs. Carter and Frost have not limited themselves to outlining the successive steps in the advancement of our science, but discuss leading questions and clinch arguments by an array of numerous interesting questions and opinions, the result of long experience.

Dr. Carter is opposed to the new method of after-treatment in cataract extraction. He claims it is only a resuscitation of a procedure in vogue twenty-five years ago, which was condemned by Graefe, the originator of the pressure bandage. The author says, "The advantages to a healing wound of complete shelter and of gentle, uniform support is self-evident." The present method of operating for cataract without iridectomy is also denounced as an error and a departure from a reliable and safe method.

In the chapter devoted to advancement of the recti muscles allusion is made to the operation devised by Dr. Prince, of Jacksonville, Ill., erroneously located in Philadelphia. Prince's plan is slightly modified by the employment of only one suture, which after having transfixed conjunctiva and sub-conjunctival tissue is passed from without inwards through the upper part of the muscle and then again from within outwards through the lower part of the rectus. This brings the vertical portions of the thread, forming a rectangle, underneath the conjunctiva, the horizontal parts above that tissue. The ends of the thread are then tied, advancing the muscle and entirely covering the seat of operation.

The work abounds in good practical suggestions. It will prove especially welcome to the student owing to its completeness and terseness. It bears the stamp of originality, and consequently will be interesting and useful to physicians and specialists.

A MANUAL OF GENERAL PATHOLOGY. Designed as an introduction to the Practice of Medicine. By JOSEPH FRANK PAYNE, M.D., Oxon, F.R.C.P., etc., with 153 Illustrations. 8vo, pp. 560. Philadelphia: Lea Brothers & Co. 1888. Chicago: A. C. McClurg & Co.

The plan of this work is somewhat different from others that have the same title. The first half of the volume is devoted to a brief review of the topics usually described in works on general pathology, and the second half to a description of the causes of disease and their mode of action.

In the first portion we are glad to see chapters devoted to "pathological relation of blood-pressure" and "fever." These are subjects too

frequently omitted from similar works. Inflammation is not considered by the author a conservative process. In his opinion, "inflammation is damage." The chapter on fever is a brief but fair review of the modern literature of the subject.

The second portion deals with topics of very great interest. Although nearly one-half of the volume is devoted to it, many of the topics are discussed too briefly, and many should be added to make it complete.

This work does not duplicate any other. It is excellent for what it purports to be, a Manual of General Pathology designed as an INTRODUCTION to the Practice of Medicine. It should not be used to displace other text-books on Pathology, but rather to compete with the early chapters of works on Practice of Medicine, which have been entitled by the older writers principles of medicine.

THERAPEUTICS. Its Principles and Practice. By H. C. WOOD, M.D., LL.D., etc. Seventh Edition of a Treatise on Therapeutics rearranged, rewritten and enlarged. Philadelphia: J. B. Lippincott & Co. 1888. Chicago: W. T. Keener.

This work of Dr. Wood's has become a classic, and the appearance of each new edition is looked for by the profession and by students of medicine with pleasure, for as an authority it is unquestioned. The present edition is so different in title, arrangement, and in the extensive revision of old matter and addition of new, that it marks an epoch in the history of the work.

So well known is this treatise that detailed notice is not necessary. We will remark only on a few of the most conspicuous changes. The title of the book is the first of these changes to attract attention. Very much more space is allotted to measures of treatment not medicinal than in former editions, and this part now constitutes the first division of the work instead of the last.

The classification of drugs has been considerably modified. For instance, quinine appears under the head of antiperiodics instead of tonics, and a group of antipyretics follows that of antiperiodics. It need not be said that most excellent descriptions of the physiological and therapeutic action of all the new drugs that can be considered reliable have been introduced.

MISCELLANEOUS.

TREATMENT OF FOUL SHIPS.—The Surgeon-General of the U. S. Marine-Hospital Service has issued the following circular to Medical officers of the Marine-Hospital Service, and others whom it may concern:

In order to stimulate ship-masters to aid in securing a clean ocean-going fleet, the following regulation concern-

ing the treatment of foul ships is hereby adopted, and will be observed at all National Quarantine Stations:

1. When a vessel arrives at any National Quarantine Station from an infected port, and requires disinfection, she will be subjected to *ordinary disinfection*, as provided in former regulations.

2. When any vessel shall arrive at a National Quarantine Station in such foul condition as to render her dangerous from a sanitary point of view, and is found to require cleansing and disinfection, having at any former time within one year been subjected to ordinary disinfection, such vessel will be required to undergo *extraordinary disinfection*, which, in addition to the ordinary measures will include holy-stoning, scraping, the taking out of rotten wood, a second disinfection, and interior repainting, all of which will be required before granting a certificate of free pratique.

CREMATION IN BUENOS AYRES.—During the past year 993 bodies were cremated in Buenos Ayres, of which number 742 were of persons dead of cholera, small-pox, and other contagious diseases.

THE REFORM OF CIRCUMCISION.—The Israelites of Paris recently appointed a commission of surgeons under the presidency of Zadoc Kahn, the Grand Rabbi, to consider what modifications might advantageously be introduced in the ritual of circumcision. They have published rules looking to more thorough cleanliness of the operator, of his instruments, and of the infant, and have decided to do away with the sucking of the wound after the operation.—*The Annals of Hygiene*, Oct., 1888.

A FEE OF £10,000.—Surgeon-Major Freyer, M.D., I.M.S., has received a fee of one lakh of rupees (£10,000 sterling) from H.H. the Nawab of Rampur, as a token of esteem as well as an acknowledgment of his valuable services in the successful treatment of himself and General Azimuddin Khan, the popular head of the Administrative Agency of the State, who had suffered for nearly three months from a malignant rheumatic fever; his recovery has been the occasion of great rejoicing at Rampur. This is said to be the largest fee ever received by a medical practitioner in India, and probably has never been exceeded in any country.

MEDICAL EDUCATION OF CHINESE IN CHINA.—Dr. W. W. Myers' three pupils, who have completed a course of four years' instruction under his direction at Formosa, recently passed an examination in Shanghai. The result, with the percentage gained at the primary examinations in Hong Kong and Shanghai, was as follows: Goh Kit-moh, 72 per cent.; Chan Ching-hai, 68 per cent.; Li Tsun-fan, 66 per cent. Following the presentation of diplomas a detachment went through ambulance manoeuvres, stretcher drill, dressing the wounded, and applying splints adapted from the Chinese umbrellas.—*The British Medical Journal*, Oct. 6, 1888.

DR. CHARLES W. PURDY will return from Europe about November 1.

DEATHS FROM CHLOROFORM.—During 1885, 1886 and 1887, nine persons died in Australasia while under the influence of chloroform, four of the cases being in Sydney.

PROFESSOR FR. SCHULTZE, of Dorpat, will take the chair at Bonn made vacant by the death of Prof. Rühle.

DR. PAGLIANI, Professor of Hygiene in Turin, has been appointed Director of the Institute of Experimental Hygiene in Rome.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from October 6, 1888, to October 12, 1888.

Major John W. Williams, Surgeon, on duty with batal-

lion on Second Artillery, now at Ft. Wadsworth, New York Harbor, is granted leave of absence for one month, with permission to apply to the proper authority for an extension of one month. Par. 1, S. O. 209, Hdqrs. Div. of the Pacific, Governor's Island, New York City, October 4, 1888.

Major Frank Meacham, Surgeon U. S. Army, died at Ft. Douglas, Utah, October 9, 1888, at 1:20 P.M.

By direction of the acting Secretary of War, the following named officers of the Medical Department will report in person, on the dates set opposite their respective names, to the President of the Army Medical Examining Board, Army Building, New York City, for examination for promotion: Capt. James C. Merrill, Asst. Surgeon, October 16, 1888; Capt. George McCreery, Asst. Surgeon, October 16, 1888; Capt. Richard W. Johnson, Asst. Surgeon, October 9, 1888. Upon completion of their examination the officers named will rejoin their proper stations. Par. 5, S. O. 231, A. G. O., October 4, 1888.

Capt. William B. Davis, Asst. Surgeon U. S. Army, is granted leave of absence for six months, by direction of the acting Secretary of War. Par. 12, S. O. 232, A. G. O., October 5, 1888.

Capt. John M. Banister, Asst. Surgeon, leave of absence granted in S. O. 210, September 10, 1888, from this office, is extended one month, by direction of the acting Secretary of War. Par. 2, S. O. 232, A. G. O., October 5, 1888.

By direction of the acting Secretary of War, Capt. Louis H. Maus, Asst. Surgeon, is relieved from duty at Ft. Schuyler, N. Y., and will report in person to the commanding officer, Ft. Porter, N. Y., for duty at that post. Par. 10, S. O. 236, A. G. O., Washington, October 10, 1888.

Capt. William G. Spencer, Asst. Surgeon U. S. Army, is granted leave of absence for two months, by direction of the acting Secretary of War. Par. 11, S. O. 236, A. G. O., Washington, October 10, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Two Weeks Ending October 13, 1888.

Medical Inspector Adrian Hudson, ordered to Naval Hospital, Mare Island, Cal.

Medical Director A. L. Gihon, detached from the Naval Hospital, Mare Island, Cal., and proceed home.

Medical Inspector N. L. Bates, detached from the "Pensacola," and placed on waiting orders.

Surgeon W. G. Farwell, ordered to U. S. R. S. "Franklin."

P. A. Surgeon H. B. Scott, detached from the New York Navy Yard, and ordered to the Naval Hospital at Mare Island, Cal.

Surgeon A. F. Magruder, ordered to duty at Headquarters of the Marine Corps.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Four Weeks Ending October 6, 1888.

Surgeon George Purviance, to proceed to Washington, D. C., for special duty. October 3, 1888.

Surgeon G. W. Stoner, detailed as chairman of board to select site for marine hospital at Evansville, Ind. October 5, 1888.

Surgeon C. B. Goldsborough, leave of absence extended fifteen days on account of sickness. September 28, 1888.

Asst. Surgeon Seaton Norman, detailed as recorder of board to select site for marine hospital at Evansville, Ind. October 5, 1888.

Asst. Surgeon J. B. Fattic, to rejoin station at St. Louis, Mo. October 5, 1888.

Asst. Surgeon G. M. Magruder, to proceed to Way Cross, Ga., for special duty. September 15, 1888.

Asst. Surgeon H. D. Geddings, to proceed to Camp Perry, Fla., for special duty. September 15, 1888.

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EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

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No. 17.

ORIGINAL ARTICLES.

THE MANAGEMENT OF EXTRA-UTERINE PREGNANCY.

Read in the Section on Obstetrics and Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY A. W. JOHNSTONE, M.D.,
OF DANVILLE, KY.

The history of the management of extra-uterine pregnancy, like every other conception which has finally resulted in good to the human race, begins with very crude—I might almost say utterly empirical manœuvres. Slowly it has emerged from its horribly uninviting chrysalis to its crawling caterpillar stage, which is almost passed, and its bright-winged life has now really begun.

Passing over without mention the mistakes and blunders of those who used to evacuate the amniotic fluid, and those who once injected substances into the gestation sac, as well as that later and better procedure, elytrotomy, let us go at once to the discussion of the only two methods which now receive much recognition from the medical world, which are electricity and abdominal section.

Let me state clearly and distinctly in regard to the electric current in all its forms, that I believe it wrong in principle, dangerous in practice, and frequently disastrous in its final results.

One of the assumptions of the originators of the electric treatment was that all one need do to stop the development of the gestation sac, was to kill the foetus, believing that on its life alone depended not only the secretions of the amniotic sac, but the growth and development of the placenta. That they in reality were nothing but what their ordinary names, foetal appendages, indicate, and that, like the nails and hair to the general body, the death of the embryo meant the immediate dissolution of all. This, however, thanks to Berry Hart, Knowsley Thornton and Tait, we know is not true, for the placenta frequently will live on, and continue developing, long after the premature death of the foetus.¹

This agrees most fully with all my studies on the endometrium, the published results of which

are contained in my papers on "The Menstrual Organ," "The Endometrium in the Cycle of the Gut," and "The Infantile Uterus." The central idea that runs through them all is, that the placental matrix has an entirely separate and distinct physiological existence from all other organs, and that its function is to take up and nourish the ovum, which is done entirely independently of control from any other source than its own nerve supply.

It is true this nourishment cannot be done until the ovum is present; it is also true that the mill cannot grind without the wheat, but no one would think for an instant that the wheat controlled the movements of the mill. In the intra-uterine condition we have a totally different state of affairs from that of the ectopic form. In the latter we have the placenta developing from the adenoid layer of the tube, but we do not have it surrounded by a powerful muscular sentinel, who is ready, on the slightest indication of anything wrong, to expel the whole of the new development.

How frequently it is our experience to find signs of life in only two or three months' abortions; so much so, that it is an egregious blunder to think every miscarriage is due to some error either in the foetus or placenta, for experience has long since taught us that repeated abortions are due as much to some conditions in the uterine wall, as they are to diseases of either the foetus or placenta.

In extra-uterine pregnancy, however, an abortion is impossible. The placenta, once started, must go on until it has finished its physiological life, the limit of which is nine months. It is the gradual death of the placenta that causes the terrible struggles of the extra-uterine foetus, at the close of the false labor, which, so far as the child is concerned, is nothing more or less than a slow asphyxia.

Thus I am thoroughly convinced that, to stop the growth of the ectopic gestation sac, it is necessary not only to kill the foetus, but also to shock the pelvic sympathetic so thoroughly as to cause an interference with its control and produce what, in intra-uterine conditions, would result in a menstrual decidua. Thus, gentlemen, you see why it is that the reported cases of electric treatment of extra-uterine pregnancy are so stubborn in

¹ Tait. American Journal of Obstetrics, April, 1888, p. 394. Berry Hart. London Obstetrical Society.

their resistance, and you see the reason for the necessity of so many repetitions of those terrible doses of electricity before there is any appreciable diminution in the tension of the sac. In all probability most children are killed by the first application, but it is the placental membranes which keep up the secretion of the amniotic fluid, and it is them you must kill before any diminution can be looked for.

Thus it seems to me to be fully demonstrated that it is not the foetal, but the maternal nervous system which must be overpowered by the battery, and for this reason I believe that the whole practice is founded on a dangerous error. Another of their assumptions, from personal experience, I can assert most positively is wholly wrong, and that is as to what the so-called "premonitory symptoms" mean.

On page 293 of the *Transactions of the American Gynecological Society*, for 1887, you will find a discussion of this subject, introduced by our honored chairman, in which all but Dr. J. E. Janvrin concurred in the belief that the "colicky pains," and "first slight shocks," are due to contractions of the tube, or movements of the foetus. He, however, took the ground that they are due to the giving way of some structure, and that in most cases it is accompanied with hæmorrhage to a greater or less degree. His speech closed the half hour allotted for the debate of papers, or I would be on record beside him. But what our President then cut me off from I here wish to say at length, and that is, that Dr. Janvrin's ideas are correct.

I have now, either as assistant or principal, officiated on about six ruptured extra-uterine pregnancies, and in every one of them we found clots of different ages. My own case, published in the *Medical Record* of February 26, 1887, showed this to a very striking degree, but to make sure that I was correct about the cases in which I assisted Mr. Tait, I wrote to him for information on that point, and here is his reply:

"7 THE CRESCENT, BIRMINGHAM, APRIL 12, 1888.

"My dear Johnstone:—To my horror I have just found your letter of February 26, under a mass of papers in my desk, unanswered. It is, I find, the most fascinating occupation that gynecologists can indulge, and just in proportion to their want of experience they dogmatize on such points as this you ask information about. As a rule, there are no symptoms of tubal pregnancy sufficient to call for medical interference, or even examination, until the time of rupture. The proof of this is that, now having seen seventy cases, I have only once had occasion to make an examination before the period of rupture, and then the symptoms were those of ordinary tubal occlusion, nothing to indicate pregnancy. The next time I saw the patient the tube had ruptured. The rupture I

diagnosed, but I thought it was a pyosalpinx which had burst, and caused general peritonitis. I operated immediately and found a large blood clot in the abdomen. I removed the ruptured tubal pregnancy and the patient got well.

"Now if there is anybody else with an experience as large as this who can give evidence to the contrary, we may begin to listen to him, but until such evidence appears, I think it may be reasonably supposed that the opportunities for diagnosis of tubal pregnancy, before rupture, are very rare, and the difficulties of recognition immense. In my preparations the point which you speak of is abundantly proved. There are successive hæmorrhages which leave their relative dates recorded in the altered blood clots. This you saw in your own experience with me here. I don't know how you are getting on with this subject on your side, but here we are going through the stages of the old story. At first the senile authorities stated, of course, that our cases never occurred, and now they are contradicting those of us who have had experience upon the most primitive facts of the record, utterly unable to unlearn their old notions, though following us in the new. It is very likely, of course, to be the same with you.

"I am much interested in what you say about the rush for electrolysis in your country, because here it is already exploded, and will rapidly subside into its original position of rampant quackery. You are at perfect liberty to make any use you like of this letter. Yours ever,

"LAWSON TAIT."

This, I think, places it beyond all doubt that Dr. Janvrin is not alone in the experience which he reports. But to me it is the rule, and not the exception, that when we are first called to cases a slight rupture has already begun. But, as in the one out of seventy which Mr. Tait saw before rupture, it is almost impossible to tell whether the tube contains pus, serum, or a foetus. So, in the use of electricity, we are not only almost sure to begin its use in cases where rupture has already begun, but we can never be absolutely sure that we are not passing it through some inflammatory mass, like that case in which one of my critics deluded himself into thinking that he had absorbed the whole of a five months' gestation sac, and all in the space of three weeks. Several less lucky cases were brought out in the debate on this subject before the British Medical Association, at its meeting in 1886. Electricity was used on inflammatory masses, and instead of absorption, supuration took place, and prompt laparotomies were all that saved the patients.

Having, as I think, pretty fully shown the errors on which its practice is based, let us turn to the immediate dangers of its use.

Fortunately, the aggregate of the cases on

which it has been tried is small, or before this we would have heard of a case of syncope, but to get it, all we have to do is to continue passing these powerful currents through the pelvic sympathetic, and sooner or later we will be sure to find a weakened heart that will not stand it. How many unreported cases like that of Dr. Janvrin the world has contained no one can tell. How many suppurations of effused blood, inflammatory masses, peritonitis, and the like, have been justly chargeable to the electric current, is a question that will probably never be solved, but from Dr. Chadwick's and others' experience with Apostoli's method of managing uterine myomata, to say the least of it, it is a condition in which we would not be at all surprised at having inflammation as a result.

An extra-uterine pregnancy never occurs in a normal tube. Whether you accept the old-time doctrine, that it is always due to a tubal occlusion, or whether you take the theory that it is frequently caused by desquamative salpingitis, which strips the tube of its ciliated epithelium, laying bare its subjacent adenoid layer, which not only robs the ovum of one of its means of transportation, but exposes to its stimulation the natural placental matrix; in either case, we have the gestation sac contiguous to some old inflammatory centres.

We have long since known that weak currents have a considerable absorptive power, but we have also known that strong ones are extremely irritating. So it seems to me that he who passes the full force of a 20-cell battery through a fresh effusion of blood, among a lot of old adhesions and cicatrices, with a possibility of a slight leakage of amniotic fluid, need not be in the least surprised to find a violent inflammation following his manipulations.

But granting that he does find his case before any blood has been effused (which remember, in Mr. Tait's experience has occurred but once in seventy cases), to shake up the smouldering embers of an old conflagration by what is almost a caustic application seems to me, to say the least of it, an extremely daring procedure. It is true that some cases have stood it, but it is also true that pregnant women have been known to fall from the third story, and repair double fracture of both femurs, without aborting, but still we do not consider it exactly the thing to pitch them out of these windows, just to see if they can all stand it.

A case has already been recorded in which a slight rupture was the means of the diagnosis of the case, and in which, in spite of several applications of the electric battery by the best electrician in New York City, the case went on to final rupture and death. I refer to the case of Dr. Janvrin, reported in the *Transactions of the American Gynecological Society* for 1886, and what I believe is that, unless we stop the use of the electric battery, it is only a question of time until

others will be placed beside it. Thus my reasons for believing it is immediately dangerous in practice are, that weakened hearts will not stand the currents we are forced to use, that we rarely ever find a case until a greater or less degree of rupture has taken place, and that the action of these terrible currents on the sac invites the completion of the tears, and that the risk of exciting immediate and violent inflammations and suppurations by thus roughly handling tissues which are already predisposed to them, is, to say the least of it, a very strong possibility.

But the greatest objection of all to the use of the electric current is its remote results. Before we knew anything about tubal diseases, or before electricity was even heard of, it was an established fact that a woman with a dead foetus in her belly was never out of danger; and now, after all the light that has been thrown on these troubles by the exhaustive study of the various pelvic inflammations, leaving out of sight all the invalidism which they cause, we know that, no matter how many years the mother may survive the foetus, she is never entirely free from the risk of a septic infection until she is laid away to her final rest.

Cases have been reported of the suppurations of lithopædia after years of apparent quiescence, it is true that such suppurations are very rare, but it is also true that lithopædiæ themselves are now a days seldom formed; many of what used to be called lithopædia we now know to be dermoid production of one sort and another, and by the more advanced methods of managing the pelvis, the errors that lead up to them in Europe are now found and corrected before they are produced, but the mere fact of one of the ultimate aims of electrolysis, being in itself a constant menace to life, seems to me goes a long way to undermine the whole practice.

Long, however, before the foetus can possibly be calcified is the greatest period of danger. Statistics, like tombstones, can be made to serve almost any purpose, and for that reason I have so far spared you, and do not now propose to inflict upon you any long tables with biased conclusions cut to fit my own ideas, but there is food for thought on this subject which I will give you in a most condensed form from a paper read before the Chicago Gynecological Society last June, by Dr. Bayard Holmes. It is his statistics, which I especially want. He is authority for saying that "Kiwisch collected a hundred cases of extra-uterine pregnancy of all kinds, and it appears from the summary of these cases given by Bandl that about 37 per cent. of these foetuses became infected, 17 died of peritonitis, more or less acute, four died of peritonitis after the foetus had long been retained, nine died through long continued suppuration and perforation, seven recovered after spontaneous elimination. Archer collected 132 cases out of which

about 47 per cent. became infected; Parry's cases show about 28 per cent. of those which had passed full term suppurated. During the first year 12 per cent. of the whole number terminated in suppuration, during the second year 5 per cent., during the third year $2\frac{1}{2}$ per cent. After this time less than 2 per cent. were infected each year." This proves conclusively, to me at least, that while the great majority of suppurations occur shortly after the death of the foetus, and that though the ratio of deaths diminished rapidly after the so called quiescent state has been reached, still the woman must carry a constant source of danger throughout all the rest of her existence, which may explode at almost any time.

Electricians may say it is not fair to quote such statistics on us, for we never practiced electrical treatment, after the fifth month, and that it is only when the pregnancy is small, before the osseous tissues begin to take the place of the cartilaginous, that we hope to get rapid absorption.

In answer to this, though it can be easily shown that you do get suppurations, in Dr. Lusk's historic paper before the British Gynecological Society two years ago, are two deaths of infants at five months, on one of which the electric battery had been used, both of which sloughed out. In the debate referred to on this subject, before the American Gynecological Society last year, Dr. Chadwick, of Boston, reported another, with like results, in which the electric battery had been used, and what is stranger still, the statistics just referred to by Holmes embrace all kinds of extra-uterine gestation. One more entrenchment the electricians may take, and that is in that old exploded idea, that the safest way of getting rid of a dead foetus is by suppuration. This Lusk shows to be utter folly. So much for the absolute risks to life, but there is still another (and to me an insuperable objection) and that is the months—and even years of invalidism which this method must entail. Now a days, when we have no hesitancy in removing incurably diseased tubes and ovaries, it seems almost like a crime, to allow a woman to carry a tube, which is not only a constant menace to her life, for months a source of pain and wretchedness, and which for years will keep her from her social duties, to say nothing of the repeated monthly congestions and second pregnancy would be almost the signature of her death warrant. Thus, gentlemen, it seems to me, that the leaving of such a condition in any stage of development, can be fraught with little but mischief to the mother, and all her associates.

I must unhesitatingly say that all extra-uterine gestations, up to the fifth month, ought to be removed through an abdominal incision, as soon as found. The very cases, which the advocates

of electricity claim the most for, are the very ones which would be the most easily and safely removed by laparotomy. In proof of this I refer you to Tait's statistics, for I am sure that no other process could possibly have saved as many women, as this last method, which has almost reached perfection at a single bound.

Where a complete rupture has taken place, that is where a vessel large enough to bleed a patient to death, has given way, and which is not held in check by some rapidly adhesive form of peritonitis, not even the most enthusiastic admirers of electricity would for a moment think of using galvanism or of doing anything but following Tait's lead, and when they fully realize that the initial shocks are due to a lighter form of the same condition, I believe they would hesitate before passing their powerful currents through it.

Just on this point let me say that I believe a large proportion of the difference between Tait and his opposers is a misunderstanding in the time when the tear takes place.

Tait knows from his operative experience that the premonitory shocks are nearly always due to a greater or less degree of rupture, and acting on this knowledge, *operates at once*, classing all his cases under the one head of rupture.

The opposite side of the debate, though, assume that these alarming symptoms are due only to contractions of the Fallopian tube, but when they realize, what in this paper I have tried so strenuously to show, that they are in reality dealing with rupture, I believe they will find themselves not so very far after all, from the ground on which Tait has built an everlasting monument. Though leading the van, Tait is not alone in successful European work, on extra-uterine pregnancies, for Berry Hart, Martin and others have reported almost equally good results, and I am glad to say that the profession on this side of the Atlantic are waking to the necessities of the case.

Since the report of my success, cases have been reported by S. C. Gordon, of Portland, Maine; Joseph Price, of Philadelphia, Pa.; William Gardner, Montreal, Canada; G. M. Tuttle, of New York City, and Charles B. Penrose, of Philadelphia, all of which go to show that there are laparotomists in this country that can do the work successfully when they have the opportunity.

But for the exact status of the operation in the different countries, let me refer you to that most invaluable work of Greig Smith on Abdominal Surgery.

Up to the period of the fifth month, I doubt whether elytotomy ought ever to be done, and after that time I am sure its usefulness will be extremely limited, but we may occasionally find badly neglected suppurating cases, in which we are bound to open them, at the places where they

are about to point, and this will sometimes necessitate an elytotomy. But as the world grows wiser, I hope these purulent cases will become like vesico-vaginal fistula, and other conditions which are plainly due to neglect, an almost vanishing quantity. The results of operative interference on a viable foetus, have so far proved disheartening, and as to just what should be done with them, even our most advanced thinkers have not settled to their own satisfaction. It seems to me though, that the longer we let the placenta alone, the wider it will spread out from the centers at which it began, the more numerous its adhesions will become, and the richer will be its blood supply. It is true that a very few of these placentae reach a higher organization, and when left behind after a laparotomy are gradually absorbed. But their number is so extremely small that I do not believe we ought ever to leave them behind, where it is possible to remove them. My rule, until I see some good reason for changing it, will be in all forms of ectopic gestation, to operate, as soon as I find them, and by these means hope to give the mother the best possible chance.

Martin, of Berlin, has certainly given us, in his one successful "primary" laparotomy, a rule which I think we ought always to attempt to follow, and that is in controlling the blood supply to the placenta, we ought always to apply the ligature to the proximal, and not to the distal part of the vessel.

It is true that in some cases this would be almost impossible, but in many others we would be able to get at the broad ligaments, and thus cut off the blood current before it reaches the soft, treacherous tissue, which lies just underneath the placenta. In closing let me state that after a careful study of the subject, I am convinced that laparotomy is the only thing which ought ever to be thought of as a cure, for extra-uterine pregnancy, and that the time to operate is as soon as possible after its discovery, and if we do not use exploratory incision to clear up our doubtful cases, we are in great danger of letting our patients die without thoroughly understanding the cause of death.

When I began the preparation of this paper I thought I was almost alone in this country in the extreme ground, that a tube containing a small foetus, ought to be removed as soon as discovered without any further meddling, but I have just seen Dr. Janvrin's paper, of April 16th, before the New York County Medical Association, which shows that he, and quite a number of the younger members of the profession, are taking the same ground that this paper advocated, and speaks of two cases which have already been done by Drs. Howard, Kelly, and Joseph Price, of Philadelphia.

I do not believe the mortality on extra-uterine

pregnancies, between the sixth and tenth week—where no rupture has occurred—in the hands of first class operators with the proper surroundings, would be as much as one per cent. The truth is the proper management of extra-uterine pregnancy, is still in its infancy, and is not yet free from the encumbrance with which ovariectomy had so long to struggle. It took years, I might almost say generations, for the ovariectomist to learn not to meddle with his cases, until he was ready to take them out, and they have hardly yet got past the tapping age, but when they have reached those Arcadian days when all ovarian tumors are operated on while the patients are strong and well, by trained men, (who do not rush into it merely as a means to advance them in other branches of their practice) but who have given up to it, not only their time, their money and I might say their very souls, I hope the electric battery will have been relegated to its proper fields, and its use as a foeticide will be remembered merely as one of the transitional stages, in the developing management of extra-uterine pregnancy.

Danville, Kentucky, May 5, 1888.

THE GREAT VALUE OF A 0.25 D. CYLINDER IN THE RELIEF OF HEAD-ACHE AND EYE PAINS.

Read in the Section on Ophthalmology and Otology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY JULIAN J. CHISOLM, M.D.,

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In the selection of cylinder glasses, there is a disposition on the part of many to ignore the lesser degrees of astigmatism, as minor eye defects not worthy of recognition. I have heard often the expression from ophthalmic surgeons, that they never prescribe less than 0.5—D. lens, and am led to the belief that a very large number of young patients are allowed to suffer with eye faults uncorrected, because of this opinion. My practice and teaching for many years has been to recognize irregular refractive faults, however small, and by so doing give great comfort. In fact, I find as the result of my own experience, that these lesser faults are often the most complained of, and that the most marked and annoying reflex troubles are occasioned by the *smaller*, and not by the greater degrees of astigmatism. Pain not restricted to the eyes and forehead, but extending down the spine, disturbing the stomach, and even affecting the limbs, anxious troubles which have resisted the most thoughtful care of the physician and the skill of the gynaecologist, have been removed promptly by the use of a 0.25 cylinder lens.

Annoyances from the lower degrees of astigmatism are especially met with among the advanced pupils of the high schools, and more especially in girls. These are often hereditary faults found in the parents as well as in the children: never complained of by the parents who have no cause for eye straining, but brought out conspicuously and annoyingly in the children under forced education. Under the long continued pressure of eye work, which the education of the period demands, very small faults will cause an accumulation of irritation which suddenly explodes, and forces a suspension of study. The continued eye tax of from ten to fourteen hours in the twenty-four will cause the eyes to break down; and then, when the eyes become irritable, even a few minutes of use will bring on eye pains with headache. Eyes heretofore very strong become so sensitive that exposure to daylight is painful, necessitating the use of smoked glasses.

Most of these students have $V. = \frac{2}{3}$, and can read No. 1 of the test types with readiness. Convex glasses would blur distant vision; a very weak concave might sharpen distant outlines. *The painful eyes of these patients, cured by weak cylinder glasses, show that the apparent perfect vision $V. = \frac{2}{3}$ is not incompatible with annoying astigmatism, the writings of specialists to the contrary notwithstanding.*

The usual history of such students is, that up to within a short period, they had perfect control of their eyes, and were in the habit of reading all day and half of the night, with only short intervals of rest. Recently when preparing for an examination, which called for an extra amount of application, their eyes have given way. Now they cannot read for ten minutes without pain and headache.

With a great many of these students the continuous use of a 0.25 cylinder, usually a concave lens, set horizontally, will promptly restore all suspended privileges, and in a very few days enable full work to be resumed. Experience also teaches the wearer of these spectacles, that as long as hard work is continued these glasses cannot be dispensed with, even for a moment, without the return of eye and head pains.

It is very interesting to witness how rapidly the reflex irritations subside, when the irregular movements of the accommodating muscles are no longer called into play. Persons who could not look out into the sunshine before the consultation, find the weak cylinders and their restfulness more comfortable than the smoked glasses which they had been wearing.

It is also an experiment of very great interest in such small degrees of astigmatism as 0.25 cylinder will correct, the more especially if the angle of the fault be an oblique meridian, to note how the reversing of the lens, say from 30° to 150° , will

instantly bring on eye pains and head confusions, and they become so uncomfortable that the patient cannot stand them. Then note the expressions of satisfaction when the lenses are replaced in their proper position. This experiment alone will attest the influence which the very weak cylinders exercise towards the comforting of aching eyes and heads. Even during the office consultation a difference is felt in loss of comfort as soon as the cylinder glasses are removed from the eyes.

I find myself frequently discarding + spherical glasses given for the correction of muscular accommodative astheropia, because with $V. = \frac{2}{3}$ the true cause of the painful eyes and head aches, which had continued, notwithstanding the use of the + s., *a low degree of astigmatism*, had not been found out, or had not been considered worthy of recognition by the specialist who preceded me in the treatment of the case.

I also find myself frequently substituting the 0.25 cylinder for the 0.5, which is the weakest lens that many ophthalmic surgeons prescribe. Patients who cannot use their eyes for even a few minutes with the 0.5 — c., can read by the hour with the 0.25 c. When these patients are examined by the clock dial lines they will promptly discard the 0.5 in favor of the 0.25 in the uniform coloring of the lines.

Knowing by my every day experience, the value of the 0.25 cylinder lenses, also the great annoyance which this low degree of astigmatism produces under eye pressure, and being therefore constantly on the lookout for it, I can nearly formulate this proposition. Patients with $V. = \frac{2}{3}$, reading readily the finest print, with distant vision not much improved by + or — glasses, persons who cannot use their eyes for near work without pain, will be found on careful examination to have a low degree of astigmatism which a 0.25 cylinder will correct, to their very great comfort.

Often in testing these eyes which pain on use, they seem to possess perfect vision. In many the astigmatic dial will appear correct, all the lines seeming to be of uniform blackness. These are the patients to whom + spherical glasses are given by many ophthalmic surgeons, because the examination is deemed complete, and the low degree of astigmatism has not been detected. Put a 0.25 spherical lens before one eye, the other being closed, and the difference in the coloring of the lines will at once become prominent. *The latent, but painful astigmatism, becomes apparent.*

It is very important in the detection of these low degrees of astigmatism to close one eye. At times I find the error of refraction in one eye at right angles to the faulty meridian of the other. With both eyes open the clock dial lines are perfect, each eye seemingly correcting the fault of the other. Should the patient be examined with

the two eyes directed to the astigmatic lines the cause of painful vision would remain unnoticed. It is only when one eye is closed that the fault becomes recognizable.

Even with the one eye the sharpness of outlines of the radiating lines will vary. First one, then another, seems better outlined as the ciliary muscle modifies the crystalline lens surface in its attempt at overcoming the fault in the cornea. After staring at the dial for some little time the true meridian fixes the best lines. The faulty lines do not always come out in gray, contrasting with the sharply cut black ones. Sometimes they appear as bright blue or red, and startle the patient by the contrast.

In correcting these weak degrees of astigmatism I find the use of atropia very misleading. Hence, as a rule, I do not use it in determining the kind, and the direction of the faulty focusing in cases of $V. = \frac{2}{20}$, unless glasses prescribed without the use of atropia, do not give the desired or expected comfort. When I speak of atropia I mean homatropia, which I have exclusively used for many years for refractive work. With very few exceptions the mydriatic reverses the kind and the direction of the faulty meridian. An astigmatism of 0.25 — c. o. becomes under atropia 0.25 + c. 90. In the majority of patients the reversed lens + c. does not give the degree of comfort in its use that the — c. will, the one which corresponded with the normal condition of the eye, before the atropia was used. I find these low degrees of astigmatism, as modified by atropia, a fictitious condition which will most frequently mislead the surgeon who accepts it. Should there be any doubt in the mind of the patient as to the exact angle of the fault, then atropia lends a valuable aid in determining it.

As this, however, is not intended for a paper on astigmatism, an important error of refraction, but is designed to call attention to the necessity of correcting the minor degrees of irregular refraction in patients who have $V. = \frac{2}{20}$, a condition which many ophthalmic surgeons ignore, my object can be best illustrated by giving a synopsis of my individual office work for 1888. This list refers to private practice only, and does not include the many cases of astigmatism, worked out by my assistants at the Presbyterian Eye and Ear Charity Hospital where my dispensary work is done. In my office case-book for the year 1887, I have recorded the history of 493 persons for whom I have prescribed cylinder glasses. As in many of these persons each eye differed both as to the kind, the degree and the angle of the irregular refraction, I have thought it best in tabulating my astigmatic work, to refer to the 986 eyes rather than to the 493 persons. All of these patients sought advice for the relief of eyes which were painful on use. I used atropia on 135 of the 493 persons, in about 27 per cent. of the

cases. These were pay patients who expected relief. Had the glasses prescribed not given comfort, they would have returned for further treatment, and I would then have used atropia to sustain, correct, or to modify my first diagnosis. I must therefore believe that the majority of the glasses prescribed, without the use of homatropia instillations, were satisfactory. In a great many instances I have evidence of the entire comfort secured, and the perfect control regained over the eyes even months after the glasses 0.25. — c. were given.

No.	ANGLE.	No.	DEG.
267	— 0.25°.	546	0.25. D.
90	— 0.25°.	171	0.5. D.
79	— 0.25 oblique.	66	0.75. D.
29	+ 0.25°.	60	1. . D.
85	+ 0.25°.	35	1.25. D.
16	+ 0.25 oblique.	22	1.5. D.
63	— 0.5°.	10	1.75. D.
23	— 0.5°.	27	2. . D.
37	— 0.5 oblique.	8	2.25. D.
6	+ 0.5°.	11	2.5. D.
28	+ 0.5°.	5	2.75. D.
14	+ 0.5 oblique.	12	3. . D.
23	— 0.75°.	6	3.5. D.
9	— 0.75°.	2	4. . D.
15	— 0.75 oblique.	1	5. . D.
4	+ 0.75°.	1	5.5. D.
10	+ 0.75°.	3	6. . D.
7	+ 0.75 oblique.		
15	— 1.°.		
6	— 1.°.		
15	— 1. oblique.		
1	+ 1.°.		
13	+ 1.°.		
10	+ 1. oblique.		
9	— 1.25°.		
5	— 1.25°.		
12	— 1.25 oblique.		
0	+ 1.25°.		
5	+ 1.25°.		
4	+ 1.25 oblique.		

TABLE Showing the Direction of the Error of Refraction.

TABLE Showing the Degree of Astigmatism in 986 Eyes Prescribed for in the Office Practice of Dr. J. J. Chisholm, of Baltimore, Md., during the year 1887.

Of the 986 eyes, all of them more or less painful in use, so that relief was sought, 546 indicated an error of refraction which a 0.25 — cylinder corrected. Had I not sought for, and

found this small error, which in the relief given proved to be the cause of all discomfort, I would have turned away nearly two-thirds of my patients unrelieved. Some of these patients brought painful eyes and 0.5 cylinders prescribed by ophthalmic surgeons of deservedly high standing. The change from the 0.5 + or — cylinder lens which over corrected, to the 0.25 cylinder which made the lines on the dial uniform, removed at once the discomfort complained of. It enabled patients to read by the hour when with the stronger glasses they could not use their eyes at all. This magical and immediate change was brought about by no other treatment than the recognition of the low degree of astigmatism, and the substitution of 0.25 for 0.5 cylinder. In some cases of defective vision sight would be improved from $\frac{1}{10}$ to $\frac{1}{5}$ by these weak cylinders.

As I have been pursuing this line of investigation for several years, and have learned to suspect low degrees of astigmatism in eyes painful in use, which exhibited $V. = \frac{2}{3}$, in seeking for it I find it. I could readily, from my case-book, give the detailed account of hundreds of patients, who, from not being able to read for more than a few minutes without glasses, could by the aid of a 0.25 cylinder, read for many hours.

It is only necessary to call attention to the frequency, and to the annoyance of these small degrees of astigmatism to have others find them as frequently as I do. The more familiar one becomes with these minor defects the more readily are they detected. I am sure that every month's experience adds to my facility, and also to the number of cases seeking advice. For the year 1887, 546 painful eyes showing only 0.25 D. fault were prescribed for in my private practice, and were relieved.

Through this paper I desire to impress others with my conviction, that painful eyes with $V. = \frac{2}{3}$ very frequently means astigmatism. Also that experience will show, that the most useful cylinder for the correction of eye and head pains in this very large number of patients, is the 0.25 D. cylinder. From my standpoint it becomes the most valuable astigmatic lens of the Trial Case.

DR. H. CULBERTSON: As to the 0.25 diopter being the more useful of lenses in the correction of ametropia, I can verify Dr. Chisholm's position to the letter. Not infrequently I can double vision with a D. 0.25 + or negative. As to the correction of ametropia upon the apparent refraction of an eye, I would say that I have not infrequently been compelled to do this after having used mydriatics and when the latter denoted the employment of different glasses.

As to binocular astigmatism, I must assure the Section, and especially Dr. Savage, that my views are original on this subject, and that I had not seen his article on this theme until he kindly pre-

sented me with a copy since I read my paper before the session. The doctor and myself have both been engaged in investigating this form of ametropia for about the same length of time and independently and unknown to each other.

Being a devotee to truth and not wedded to any solution of the *modus operandi* of binocular astigmatism, or claiming in my paper more than a hypothesis as to the cause of this anomaly, I can only learn with pleasure of the views of Dr. Savage. In looking over his brochure on this subject hastily I understand that gentleman to hold that the entire phenomena of binocular astigmatism is due to anomalies of the four oblique muscles. If I am correct in this inference, I am compelled to differ on this point, believing that the state of the recti are concerned in this anomaly not infrequently, as well as the oblique. The five-minute rule will not permit me to enlarge upon my views on this point.

As to the relation of the ciliary muscle to this anomaly I cannot now state a positive opinion, for my investigations as yet do not permit me to say that it has not a positive or negative influence in the phenomena of binocular astigmatism. As for myself, future investigations must determine this point.

SOME OF THE INFLUENCES OF THE SYMPATHETIC NERVOUS SYSTEM IN DISEASE.

Read in the Session on Practice of Medicine at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

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My attention was drawn to the influences of the sympathetic nervous system, in diseases of mucous membrane, in connection with my studies in rhinology and laryngology. In a paper read before the fourth annual meeting of the American Rhinological Association, at St. Louis, in 1886, on "Naso-pharyngeal Catarrh, as a Cause of Neurasthenia," I attempted to show that functional derangement of the different portions of the body were effected through the great sympathetic nervous system. Also, in a paper read before the American Rhinological Association, at Washington, last September, on "The Pathology and Treatment of Naso-pharyngeal Catarrh," in which I attempted to demonstrate that the diseases of the nasal and pharyngeal mucous membrane, generally called naso-pharyngeal catarrh, was not an inflammation of the mucous membrane, but was a condition produced by paresis of the sympathetic ganglia and nerves supplying the mucous membrane and blood-vessels of these parts.

In the last mentioned paper I alluded to the

fact that if paresis of the cerebral and cervical ganglia and nerves of the sympathetic nervous system caused catarrhal and other troubles in the upper air passages, that it might be the means of explaining a great many pathological conditions in organs and portions of the body supplied by the sympathetic nervous system. It is for the purpose of calling attention to the pathological conditions of the sympathetic nervous system, or to the pathological conditions of the parts supplied by this system of nerves, that I present this paper. The term pathology is too frequently used where pathological anatomy should be used. In a large number of troubles produced by paresis of the sympathetic system, we are not able to detect anatomical lesions. Pathology bears the same relation to pathological anatomy that physiology does to histology.

I will not take up your time with the anatomy of this great nervous system, taking it for granted that every member of the American Medical Association is familiar with the anatomy and histology of both the cerebro-spinal and sympathetic nervous systems.

The anatomy, histology, physiology and pathology of the sympathetic nervous system is one of the most interesting and of the greatest importance to every medical man. Yet it is a subject that is very much neglected in our medical colleges and by medical men after they enter practice.

This system of nerves is sometimes called the ganglionic nervous system, and the nervous system of organic, or vegetable life. By a more thorough knowledge of the sympathetic system we might be better able to understand what appears to be some of the mysterious phenomena of disease.

Commencing as it does within the cranium by the ophthalmic ganglia, with its double chain extending down on either side of the spinal column, terminating below in front of the coccyx in a single ganglion—the coccygeal ganglion.

In the cranium we have four ganglia, called the cerebral ganglia, the ophthalmic, the sphenopalatine, the otic, and the sub-maxillary. In the neck there are three cervical ganglia; the superior, middle, and the inferior. In the chest are situated the twelve thoracic ganglia, corresponding to the twelve ribs. In the abdomen we find the great semilunar ganglia, sometimes called the abdominal brain, with its large plexus of nerves, called the cœliac plexus. In the lumbar region, in front of the spinal column, are the four or five lumbar ganglia. In the pelvis we have the four or five sacral or pelvic ganglia, and terminating below and in front of the coccyx, is a small single ganglion, the last of the double chain called coccygeal ganglion, or ganglion impar. Thus the sympathetic nervous system, or cord, as it is sometimes called, consists of from twenty-eight to

thirty ganglia on either side of the spinal column, terminating below in a single ganglion. Each ganglion is connected by nerves with the other ganglion of the same portion, each group of ganglia being connected with the group directly above or below. Each ganglion is also connected with the cerebro-spinal nervous system, receiving filaments from the cerebro-spinal afferent nerves and giving off nerves to the cerebro-spinal efferent nerves in addition to the filaments it gives off to the organ or tissue it supplies.

The question has frequently been asked as to the dependence of the cerebro-spinal and sympathetic nervous system upon each other. In a course of lectures recently delivered by Dr. Gaskell, before the Royal Institute of London, he claims that no new nerve fibres arise in the sympathetic ganglia, but that the fibres destined to them from the cord comes from the inner portion of the posterior horns and inner portion of the gray matter. They are medullated, but in passing through the ganglia they lose their medullary sheath and divide into smaller strands. The old distinction between the two nervous systems, that the cerebro-spinal needs repose, whilst the sympathetic does not, since it cannot be proved, and indeed, is highly improbable that the activity of the brain and spinal cord is ever completely in abeyance. Dr. E. Long-Fox, in his excellent work on the sympathetic nervous system, gives a number of instances of the natural dependence of the two systems. He says, "The fact, that in spite of this natural dependence the sympathetic, under conditions of lesions of brain or cord, is enabled within certain limits to act independently." Parks states that nutrition is probably carried on with complete destruction of the cerebro-spinal centres.

Fox states that "reflex irritation of the vasomotor nerves can be entirely limited to the particular organ or tissue supplied." Thus in Vulpius's experiment, some days after the transverse section of the sciatic nerve, or of the brachial plexus, when the corresponding pulp of the paws of the animals had become quite pale and anæmic, he was able by slight rubbing of these pulps to cause a reflex congestion. The fact of the continuance of the heart's action for a time in some mammals after its separation from the body, in the frog, after the destruction of the brain and medulla oblongata, irritation will cause congestion of the limbs. In mammals, after section of the cord at the mid-dorsal region, sensory excitation of one posterior limb will cause reflex heart phenomena in the other.

While the sympathetic ganglia may not, and probably do not, have the power of generating nerve force independently of the cerebro-spinal system for any great length of time they do seem to act as storage batteries and accumulate nerve force generated by the cerebro-spinal system.

This accumulated force is capable of carrying on the life process after the cerebro-spinal system ceases to act. But this action can only be kept up for a limited time unless reinforcement is received from the cerebro-spinal. This reinforcement is received through the afferent filaments going to each ganglion. If a lesion of the cerebro-spinal system takes place in the region of these afferent nerves, or the afferent nerve is severed, the ganglion will only retain its power for a limited time and the same result will take place that is found after the lesion of the ganglia or its nerves.

Fox says, "Lesions of the cervical cord may cause the same oculo-pupillary phenomena as lesions of the superior cervical ganglion." Lesions of the cervical cord (seventh cervical and first dorsal) may cause the same vaso-motor paralysis evidenced by unilateral vascular dilatation of the face, ear, and head, as is seen in lesions of the cervical sympathetic ganglion.

Hemisection of the lower third of the dorsal region of the cord produces vascular dilatation in the lower limit of the corresponding side, and so increase of temperature.

All lesions of the spinal cord, and pressure on it, may enfeeble the vascular tone of the parts in relation by their vaso-motor nerves with the region of the cord below the lesion. The general distribution of the sympathetic nerves is to the mucous membrane, and possibly to integument, to non-striated muscular fibres to the heart, and particularly to the muscular coats of the arteries. The parts principally supplied with sympathetic nerves are usually capable of none but involuntary movements, and when the mind acts on them at all it is only through the strong excitement or depressing influence of some passion, or through some voluntary movement with which the action of the involuntary part are commonly associated. In the volume on the nervous system in "Flint's Physiology of Man," we find a long list of experiments made upon the sympathetic system, for which I am much indebted, as I make use of a number of them.

In 1727 Petit made some experiments upon the cervical portion of the great sympathetic nervous system. His experiments only showed its influence upon the eye, also, that the influence of the sympathetic nerves was propagated from below upwards towards the head, and not from the brain downward, as in the cerebro-spinal system.

In 1816 Deputy removed the superior cervical ganglia in horses with effect of producing infection of the conjunctiva, increase of temperature in the ear, and abundant secretion of sweat upon one side of the head and neck. In one experiment upon the removal of the ganglia on both sides, in a horse already feeble and emaciated, the face and ears became hot and moist. He says that "the consequences of destruction of the ganglia are, contraction of the pupils, redness of the conjunc-

tiva, general emaciation, as well as oedema of the extremities, and a general cutaneous eruption. These experiments show that the sympathetic has an important influence on the circulation, nutrition, calorification and secretion.

In 1851 Bernard repeated the experiments of Petit, dividing the sympathetic in the neck on one side, in rabbits, and noted on the corresponding side of the head and ear increased vascularity and an elevation in temperature amounting to from 70° to 110° F. This condition of increased heat and vascularity continued for several months after division of the nerve. In 1852 Brown-Séquard repeated these experiments and attributed the elevation of temperature directly to an increase in the supply of blood to the parts affected. He made a most important advance in the history of the sympathetic, by demonstrating that its section paralyzed the muscular walls of the arteries, and further, that galvanization of the nerve in the neck caused the vessels to contract. This was the discovery of the vaso-motor nerves.

The experiments of Petit, Bernard, and of Brown-Séquard, were of great value, as they demonstrated that the sympathetic influences the general process of nutrition, and that many of its filaments are distributed to the muscular coat of the blood-vessels. Flint says, "when the sympathetic is divided in the neck the local increase in temperature is always attended with a very great increase in the supply of blood to the side of the head corresponding to the section. The increased temperature is due to a local exaggeration of the nutritive processes apparently dependent directly upon the hyperæmia. There are numerous instances in pathology of local increase in temperature attending increased supply of blood to restricted parts."

If the sympathetic is divided in the neck of a rabbit and both ears are cut off just above the head with a sharp knife the artery on the side on which the sympathetic has been divided will frequently send up a jet of blood to the height of several feet, while on the sound side the jet is always much less forcible, and may not be observed at all.

Analogous phenomena have been observed by section of the sympathetic in other parts of the body. Samuel has noticed an intense hyperæmia of the mucous membrane of the stomach and intestines following extirpation of the coeliac-plexus. By comparative experiments it was shown that this did not result from the peritonitis produced by the operation.

When the sympathetic filaments distributed to a gland are divided the supply of blood is very much increased, and an abundant flow of the secretion follows. Dr. Moreau has made a series of observations on the influences of the sympathetic nerves upon secretion of liquid by the intestinal canal, which are particularly interesting in their

bearing upon the sudden occurrence of watery diarrhoea. In these experiments the abdomen was opened in a fasting animal and three loops of intestines, each from four to eight inches long, were isolated by two ligatures. All the nerves going to the middle loop were divided, care being taken not to sever the blood-vessels. The intestines were then replaced and the wound in the abdomen was closed with sutures. The next day the animal was killed. The two loops with the nerves intact were found empty, as is normal in fasting animals, and the mucous membrane was dry, but the loop with the nerves divided was found filled with a clear, alkaline liquid, colorless, or slightly opaline, which precipitated a few floculi of organic matter on boiling. I will not enter into the details of the function of the sympathetic nervous system. It is well established that it regulates the blood supply, the temperature, the nutrition and secretion. And in the experiments mentioned it has been seen that the destruction or removal of any ganglia, or section of the sympathetic nerves supplying a certain part or organ of the body, alters the circulation, temperature, nutrition, or secretion, or all these, in the part of the body or organ which receives nervous supply from that portion of the sympathetic nervous system. It is thought that the sympathetic has the power both of conducting, transferring, reflecting, and possibly of augmenting or of inhibiting impressions made on it. Near the terminal filaments of the sympathetic nerves there exists numerous ganglionic cells.

The marvelous effects of reflex action in health and disease, in connection with the sympathetic nervous system, is well recognized by every medical man. For coarse stimuli the spinal cord and medulla oblongata are the chief centres for vaso-motor reflex action. But the heart is more or less independent of these great nerve centres. A reflex arc exists in its own substance. Reflex movements are excited from all sensory nerves, not only spinal, but also sympathetic. Claude Bernard has shown that reflex action can occur in the sub-maxillary gland when all nerves that communicate with the cerebro-spinal centre are cut. If the superior cervical ganglia are separated from the higher nervous centres oculo-pupillary phenomena can be reflexly excited. That the uterine centres can act independently is seen in the occasional expulsion of the child after the death of the mother. The expulsion of *fæces per anum* after the death of the patient shows also that the sympathetic ganglia of the intestines are centres for independent reflex acts.

In a paper read by Dr. Woakes before the International Medical Congress, at London, he speaks of the sympathetic ganglia as reflex centres. Drs. Fox and Woakes give a number of examples to show the reflex power residing within the sympathetic system.

It is not my object in this paper to call attention to the reflex phenomena of the sympathetic system, but apply the physiological facts we have mentioned to the influence of this system of nerves upon the circulation of the blood and the condition of the blood-vessels, more particularly to that condition called catarrh, or inflammation of mucous membrane, and to the deranged function of certain organs dependent upon disturbance of local circulation. It is impossible to give a definition of inflammation that will be brief and exact at the same time. Inflammation is a term implying a whole series of processes, partly vascular, and partly textural, and their processes admit of great varieties of combinations. We have certain characteristics of inflammation but the whole content of the term cannot be fully indicated without describing briefly the process to which the term is applied. Four cardinal symptoms of inflammation are well recognized, namely: *redness, swelling, pain and heat*, with impaired function. The *redness* is from increased afflux of blood to the part. The *swelling* to an increased volume of blood in the part, and from exudation. The *pain* is caused by the swollen condition of the parts, which cause pressure upon the sensory nerve filament, or by chemical irritation. The *heat* comes from the excessive flow of blood through the part in the stage of hyperæmia.

In inflammation we have both vascular and textural changes. The first vascular change is produced by some *irritant* which being applied there is a general dilatation of the vessels, first of the arteries, then of the capillaries and veins. The flow of blood through the widened channels is more rapid at first. This is the stage of hyperæmia. After a time the speed diminishes, and at length the flow becomes slower than in the normal condition. This constitutes the stage of congestion. During this stage we have a migration of the blood corpuscles through the walls of the veins and capillaries into the surrounding tissue, but not from the arteries associated with the passage of the corpuscles. There is always an escape of liquid, which is comparatively rich in albumen. This is the stage of exudation, or infiltration.

All these changes and stages depend upon a molecular alteration in the walls of the blood-vessels. Mere paralytic dilation does not give rise to slowing of the current or to the passage of the blood corpuscles through the walls of the vessels. The inflammatory changes in the blood-vessels must of necessity be associated with tissue changes. These changes vary with the nature of the exciting cause, and with the intensity of the inflammation, with the character and extent of the vascular disturbance, and with the nature of the tissue. Inflammation cannot exist without molecular death.

Is it possible to have these cardinal symptoms of inflammation, *redness, swelling, pain and heat*,

with impaired function dependent upon paresis, or paralysis of the sympathetic nervous system, without inflammation, without structural change in the blood-vessels, without molecular death? This question opens up the question of contractions, dilatation, erectility and reflex vaso-motor effects. The function of the vaso motor nerves most frequently called into exercise is contraction.

Fox says, "The motor nerves that preside over the muscular contraction of vessels, and rule the local circulation, are the nerves that issue mainly from the ganglia of the great sympathetic, creep along the arterial walls, and can be followed into the middle muscular coat of the arteries. The vaso-motor apparatus therefore is in a state of permanent activity, never in repose, never inert. The muscular tunic of the vessels is in a state of semi-contraction—in other words, of vascular tone. Variation in this tone will be the necessary consequence of various modifications of the nervous apparatus."

The vaso-dilators are also in a constant state of action but are fewer in number than the contractors. Were it not for the pressure and action of the vaso-dilators, the vaso-contractors would cause undue and complete contraction of the vessels. The arteries possess both elasticity and contractility; the small arterialis contractility only. The vaso-contractors and dilators acting together keep up the proper calibre of the vessels.

When from the presence of some irritant upon the vaso-motor nerves, or as the result of mental impressions, etc., by reflex action, the vaso-motor nerves become affected, lose their tone, the ganglia soon loses its power, paresis, or partial loss of power takes place, the vessels dilate and remain dilated. As the result of this ganglionic paresis, we have *redness* from the increased afflux of blood to the part, we have *swelling* from increased amount of blood in the part, and after some time from the excessive nutrition furnished the tissue, the *pain* being produced by the pressure upon the sensory nerves, the *heat* from the rapid and excessive flow of blood through the part, we do not have changes taking place in the vascular walls. In the experiments made by Petit, Bernard, Brown-Séquard, and others, to which allusion has been made in this paper, it was shown that by removal of the ganglia, or section of its nerve filaments, that the part of the body supplied from that ganglion had an increased flow of blood into and through the part. That there was considerable increase of temperature, *redness* and *swelling* of the part, and, no doubt, *pain*. That there was increased secretion and nutrition.

In conclusion. When we take into consideration the anatomy and distribution of the sympathetic nervous system, together with its physiological functions, and its pathological action under artificial impairment, is it not reasonable to sup-

pose that if a ganglion becomes impaired and loses its power that we might have such conditions taking place that would explain a number of the phenomena occurring in diseases of organs or other parts of the body supplied by the great sympathetic nervous system?

Would it not explain many of the functional brain troubles? of eye, ear and nose, pharyngeal and laryngeal troubles. Pneumonia can be more easily explained in this way than in any other. Some heart, stomach, and kidney troubles can be explained by sympathetic paresis. Gynecological troubles lose half their terror when viewed from this light.

We all are aware that in the cases of troubles mentioned recovery is more rapid and complete when treatment is directed to the sympathetic nervous system.

A PLEA FOR THE BETTER RECOGNITION OF THE OCULIST IN THE SERVICE OF THE U. S. PENSION DEPARTMENT.

Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Ninth Annual Meeting of the American Medical Association, May, 1888.

BY JOHN W. WRIGHT, M.D.,
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The U. S. Pension Department has been established for the purpose of remunerating those who have become disabled while in the service of their country by reason of injury, sickness or deprivation.

While the Government is endeavoring to provide for these persons, it becomes necessary to guard against impostors, for the recompense is amply adequate to induce those who are so disposed to make the effort to obtain it. For this reason boards of examining surgeons and special agencies have been established throughout the country, as well to enable the deserving to procure what is justly due them as to prevent others from obtaining that which does not belong to them.

At present the applications for this beneficence are in great profusion, for the reason, perhaps, that many of the older ones who served in the late civil war mistake their physical impairments from age for disabilities from wounds and exposures from army life; while others who received injuries while in service or suffered from the sicknesses and privations consequent to a camp life, although not considered at the onset sufficiently disabled for a pension, have developed with increasing years diseases and infirmities which have rendered them confirmed invalids.

It is doubtless the design of the Government authorities that the machinery of the Pension Bureau shall be as complete as possible; for the nearer it approaches perfection the more will the

chances for fraud be diminished, hence every application receives the most careful and deliberate consideration at the hands of this department.

The Medical Referee, in his instructions to examining surgeons, states that (Art. 5) "the object of a medical examination is to obtain a full and complete description of the disabilities for which pensions are claimed, and to gain a *clear and distinct idea of the extent to which they disable in the performance of manual labor.*" (Art. 6.) "To this end it is necessary that *every disability existing* shall be fully described," etc.

Under the heading of "*Diseases of the Eyes,*" (Art. 58) we find: "In all diseases of the eyes involving internal structures the ophthalmoscope must be brought into use, otherwise the examination is of little value."

In closing the instructions the medical examiners are reminded "that the interests involved in pensions are of such magnitude as to demand the employment of the very best skill this country can supply." The term "a full and complete description of the disabilities" is sufficiently significant to indicate the desire of the head of the medical department.

That "the ophthalmoscope must be brought into use, otherwise the examination is of little importance," is pertinent; but could the department have fully comprehended the necessary knowledge of optical principles and the constant and unremitting practice which underlie a correct application of this instrument, in order to be able to detect the various pathological conditions in eye affections, I do not believe this last clause of instructions would have been imposed upon medical gentlemen of whom not one in every hundred can realize the practical value of this instrument. This may seem to many an exaggeration, yet I believe every oculist here will bear me out in this assertion. Nor is this intended to reflect upon the abilities of examining surgeons—for there is not an instrument of diagnosis of such incalculable value, in my estimation, so difficult of application as the ophthalmoscope.

In making this entreaty, a few cases which have come under my immediate observation may be in place.

A gentleman living in the eastern part of Ohio, who served his country during the War, made an application for a pension because of a disease of the eyes which rendered him almost blind and incapable of earning a livelihood.

He was ordered before a board of examiners, and in due time he received a pension and considerable back pay. Some time afterward he was induced by his friends to consult me in reference to his eyes. I found that he had entropium, which had followed what he termed the "army sore eyes." There was no complication or structural disorganization of the parts, the inflammation being simply mechanical, the result of the hairs

which were constantly rubbing against the balls.

I informed him what could probably be done and, seeing an opportunity of giving him great relief, I encouraged him with the possibility of considerable improvement in his vision. I saw that he was not favorably impressed with my opinion, and I naturally presumed that he did not have the confidence in my ability to accomplish that which I had given him encouragement could likely be done. I afterward learned that he had *too much* confidence in my ability to help him. He feared that the operation would prove so successful that he would be compelled to relinquish his pension. Afterward, upon making inquiry, I was surprised to learn that he had obtained his pension because of "glaucoma."

Mr. B. had served considerable time in the army. Four years ago I operated upon one of his eyes for cataract, he being blind in both eyes. The operation proved very successful and the patient returned to his former occupation—that of a contractor—which he had been compelled to relinquish almost a year before the operation, and which he now manages with very little inconvenience.

Not long since he got into the hands of a pension solicitor and was easily made to believe that his blindness had been the result of sickness and exposure while he was in the service. He "*did* remember of having had the jaundice while in camp," and how "*yellow*" his eyes looked. "This was doubtless the key to his blindness."

An application for a pension was at once made, and in due course of time he was ordered to appear before the board of examining surgeons. One of the examiners who makes some pretensions to a knowledge of eye diseases and the use of the ophthalmoscope was delegated to examine all such applicants, and accordingly examined this gentleman's eyes.

An elaborate examination was at once commenced, and the ophthalmoscope was brought into vigorous use. An hour at least was consumed in the examination. Of course the opaque lens was seen in the eye which had not been operated upon, or I presume it was, as the ophthalmoscope was made to play upon it at least one-half of the time; and in the other eye the cicatrix where the incision had been made in the upper part of the cornea, and the irregular-shaped pupil, were plainly discernible, and excited the interest of the surgeon.

The surgeon inquired what had happened to the eye. Evasively he was answered that "some doctor had been trying to operate upon it." The examining surgeon then ventured the remark that it had been "*badly butchered,*" and advised him not to allow the other eye to be "meddled with," or he would be left "*entirely blind.*" The applicant has received, I understand, a comfortable pension.

Of course it is impossible for us to say that the applicant's jaundice, together with his other sicknesses and exposures in the service, *did not* cause or contribute in some way to the opaque condition of his lenses, although his mother and a sister, who were not exposed to these influences, were both blind from cataract.

Although the origin of a disability is considered a legal matter; that is, a thing to be determined by evidence obtained outside of the medical examination, yet the examining boards are largely entrusted with the duty of distinguishing and separating disabilities of origin either before or after enlistment from those which occurred during the actual service.

In the above case the opinion of any reputable oculist, doubtless, would have precluded a pension.

A gentleman from the southern part of Ohio came to my office a few years ago and desired me to make an examination of his eyes and give him a written opinion. He made the statement that while in the army he had had sunstroke, and with it the loss of an eye. He was discharged and sent home, not on account of the loss of the eye, but because of his general physical disability which followed the sunstroke.

A few months after returning home, while engaged in some work requiring physical exertion, he suddenly lost his sight in the other eye. He was now practically blind, although not *entirely* so, for he could grope his way around to a better advantage than if he had been totally blind, but he was so blind that it was impossible for him to distinguish one object from another, or to be able to perform any labor that could not have been accomplished by a blind man. He had made several attempts to procure a pension, and had been ordered before different examining boards; but for some unaccountable reason to him he had never been able to obtain it. Finally it came to his ears that it was intimated by some persons that he was a malingerer, and it was to contradict this report and to place himself in a proper standing among his friends, rather than an aid in procuring the pension, that he desired the examination and a written statement concerning the condition of his eyes.

The examination with the ophthalmoscope revealed the fact that there had undoubtedly been very extensive retinal hæmorrhages involving the maculæ in both eyes. The hæmorrhagic spots had been unquestionably very numerous, as there were many places marked by choroidal alteration or replaced with blackish pigment. In other places the retinal tissue seemed to be degenerated and marked by a whitish or grayish tinge. There was such complete destruction of the retinal tissue that it was impossible for him to more than know that an object was in front of him in good light. I gave him a certificate stating the facts, since which time I have heard nothing from him.

I do not recollect of ever having seen or heard of retinal hæmorrhage caused from sunstroke, but, owing to the engorged condition of the sinuses and veins of the brain during the active stage of the affection, it is readily understood how it could occur.

The second hæmorrhagic attack can be explained because of the tendency of recurrences of cerebral engorgement after sunstroke, marked by sudden depressions upon exposure to heat or bodily exercise.

It is fair to presume that the surgeons who had examined him took into consideration the external appearances of his eyes, and had overlooked their retinal condition.

As oculists are generally aurists, the following case which refers to the hearing is permissible:

A young man enlisted at the beginning of the War and was in active service most all the time until its close. He was in many engagements where there was heavy cannonading. When he was discharged he was somewhat deaf, and grew gradually worse for ten years following, at which time it was almost impossible for him to understand the loudest talking. Since that time he has remained in this condition.

About eight years ago I saw him, when he was making an effort to obtain a pension. He came to me because I had known him before he entered the service, and also because, he said, he had consulted me in reference to his deafness immediately after his return from the army. I have, however, no record or remembrance of his consulting me at the time mentioned by him, but from an incident which he referred to as having occurred at the time, I presume he did. At any rate I was not able to testify, as he desired evidence to establish the time the deafness began and its continuance, in order to associate it with the exposure to the heavy cannonading during the service.

Having no record of the examination I made eight years ago, I am not prepared to give the details, yet I am confident I found no appreciable lesion, because of an opinion I formed of his case at the time, and which I have had in my mind ever since, relative to the cause of his deafness.

I came to the conclusion that there was an ankylosis of the joints of the bones of his ears. These bones, as we all know, are, or should be, freely movable at their joints, although delicately attached to each other. Their articulating surfaces are covered with cartilage and connected with capsular ligaments, and lined with synovial membrane, the same as the articulating surfaces of other bones, and are no doubt liable to the same diseases as the larger joints. These joints are so adapted as to allow of the motions of the bones conveyed to them through the membrana tympani from ordinary sounds, and they perform their functions perfectly well and without injury to themselves under these conditions. But heavy

cannonading would cause, through this membrane, excessive action of these joints. Then why is not a synovitis just as likely to be induced here as it would be in the larger joints, where it is so liable to end in an anchylosis?

But it matters not whether the deafness is caused from an anchylosis of the bones of the ear or, as some authors would have it, in case of boiler-makers and others subject to like noises, that it is due to nervous exhaustion from continued shock, or, as explained by others, from chronic catarrh of the middle ear; it is quite sufficient for us to know that cannonading has been the cause of very much and intense deafness.

In this case it is impossible, perhaps, to establish an unbroken chain of evidence from the time of the inception of the injury until very marked deafness ensued, from the very fact that slight deafness, or what is termed dulness of hearing, is not very noticeable except to one's most intimate friends or associates. When the patient is no longer able to distinguish ordinary sounds, then it is noticeable to all.

Evidence that this man was exposed to heavy cannonading during his service, and that the deafness now exists—in the absence of lesions that would indicate that the deafness was not the result of army exposure—would be sufficient grounds for allowing him a pension.

If, as expressed by the Medical Referee, "the interests involved in pensions are of such magnitude as to demand the employment of the very best skill the country can supply," then it is nothing but just that *all* applicants claiming defect in sight or hearing should be referred to boards of examiners composed solely of experts in this particular class of affections.

The number of applicants claiming defect in vision alone would justify this. From July, 1886, to December, 1887, there were 4,672 pensions granted for disabilities of the eyes. As about 12 per cent. of all applicants during this time received pensions, then there was the enormous number of 39,000 applications in this class alone.

In concluding this argument I disclaim any selfish motives more than a desire that our profession may be the means of promoting the interests of many worthy applicants, and of increasing the efficiency of the Pension Department by contributing the very best skill for the examination of this particular class of applicants.

OXYPIPERIDIN, a substance derived from the distillation of benzolamidovalerianic acid, is very similar to strychnine in its action, being a strong tetanizer. The crystals of oxypiperidin melt at 30°-40° C. They are soluble in water, alcohol, ether and dilute acids. When oxypiperidin is boiled with strong acids the non-toxic substance α -amidovalerianic acid is formed.

A CASE OF PLACENTA PRÆVIA.

*Read before the Medical Society of the District of Columbia,
April 25, 1888.*

BY PHILIP MARVEL, M.D.,
OF WASHINGTON, D. C.

The subject of this report, Mrs. S., was a colored woman *æt.* 38, of medium height, small in stature, much reduced and emaciated by phthisis pulmonalis; married, one child 13 years old; no miscarriages, and had been in expectancy for some seven months when seen first by me.

According to her own statement, she had been ill of phthisis about two years, the physical signs of which were quite advanced. Through the kindness of Dr. Muncaster, who was attending her at the time for a slight uterine hæmorrhage, I was asked to take charge of her case. A second hæmorrhage occurred some three weeks later, though of little consequence so far as related to the quantity of blood lost.

My suspicion at once was that I had to deal with a case of placenta prævia, though an examination added little to strengthen or verify such a suspicion. The mouth of the womb was well closed, and quite impossible for me to insinuate my finger sufficiently far, within the cervix, to ascertain a placental offering without forcing dilatation, the expediency of which I shall have more to say further on. Principally rest, with little medication, was quite sufficient to check the flow, and my attention was then directed to the upbuilding of her general condition. Nutritious foods, good air, bromine and dilute phosphoric acid constituted the principal means employed. These were apparently effecting the results I had desired, and while waiting an opportune time to induce labor, I was called to see her with another hæmorrhage. Though not profuse, it was alarming, owing to the prostration it occasioned. For some time after my arrival, the hæmorrhage having been checked, she was unable to converse, and only slowly rallied under careful administration of stimulants and artificial heat. At this time there was no longer a question as to the condition, but a grave one, as to the most expedient procedure. To attempt a speedy delivery would be to employ means positively dangerous, and possibly to destroy the little chance that remained for her recovery. I packed the vagina, having previously inserted within the cervical canal a pledget of cotton, and gave my attention to the effort to restore her from the effect of the shock—the result of which was so transitory and unsatisfactory, that it was evident neither a conservative nor radical course of procedure was without danger.

Dr. Reyburn was now asked to see her with me, and found her substantially as above described. I attempted forcible dilatation with the fingers, but found her strength insufficient to bear it, and again we resorted to the tampon and waited dilatation, watching her all the time, and employing such

measures as the case and circumstances would allow. After six hours of watching and waiting, the cervix having in the meantime dilated, we administered chloroform and turned. The feet were brought down, and in ordinary cases, we would have waited for uterine pain and contractions, but in hers, there having been an absolute absence of both from the first, and ergot was without effect in producing them, we considered it hazardous to longer wait, hence proceeded to deliver by accoucheur force. The child being large in proportion to the woman's pelvis, in the absence of maternal aid we found it difficult and slow to relieve her; however, after some time and effort we succeeded in delivering her of a still-born child. The afterbirth soon followed. Uterine contraction was prompt and firm, and no hæmorrhage followed.

Mrs. S. rallied sufficiently to recognize and speak with her husband, nurse, and a friend who stood by her bedside, but shortly began to sink, and thus continued an uninterrupted failure for about three-quarters of an hour, when she expired. All means at hand, such as hypodermics of whisky, atropine, strychnia and aq. ammonia, together with artificial heat, were of no avail.

It may occur to some of you that it might have been wisest, as well as in keeping with a great deal of teaching upon this subject, for me to have induced labor when first I saw her with second hæmorrhage. There are conditions, individual and circumstantial, which should modify our plans and methods of treatment, irrespective, I think, of the fact that some writers have said, in every case of pregnancy when hæmorrhage occurs after the sixth month, premature labor should be induced. While, doubtless, this may serve the end well in many cases, I am strongly inclined to look upon this latter statement as dangerous teaching. Since it is impossible for one to formulate a rule, or set of principles, which will cover all conceivable conditions, it seems both unwise and unwarrantable to ask one to follow absolutely teachings which admit of no qualification. It would seem to conserve the proper end of treatment in any case to use at all times, and under all circumstances, the means which offer the greatest security to life, with the least possible danger. This principle I endeavored to apply to the case before you. When called to see her there was much more to be considered than the question of delivery. This was of little moment compared with the probable results of interference. It was evident to me that she was in no condition to stand the shock which induced labor would in her case occasion, hence the reason why I adopted a conservative procedure, when to prolong gestation was to prolong a threatening danger. The necessity for rapid delivery when induced in this case is, I think, apparent to all, and need not be further referred to. I submit the report to you, and will receive kindly any just criticisms you may have to make.

HYDATIDIFORM MOLE.

*Read before the Medical Society of the District of Columbia,
April 25, 1888.*

BY J. H. MUNDELL, M.D.,
OF WASHINGTON, D. C.

I was called about 11 A.M. on the 12th of April, 1888, to see Mrs. L. T., 19 years of age. Upon reaching the patient's house I was told that she had menstruated last about the 15th day of January. About the first of March she began to suffer with nausea and vomiting. After March 16 the nausea and vomiting became more distressing, accompanied by frequent slight hæmorrhages. A physician was called in, who visited her several times in the next two or three weeks. His remedies failed to give her the slightest relief, and not having made a diagnosis in the case satisfactory either to himself, the patient or her family, he was requested to discontinue his visits. I found her suffering with acute labor pains and flooding very profusely. Upon placing my hand upon her abdomen I found the uterus reaching to the umbilicus, quite hard and of symmetrical shape. A vaginal examination revealed the os uteri dilated just about large enough to admit the introduction of an ordinary sized goose-quill.

Her pulse was very feeble and rapid; indeed, she was almost in a state of syncope. Seeing that miscarriage was inevitable, I immediately proceeded to tampon the vagina carefully and thoroughly, which had the effect of arresting the hæmorrhage for a time. I returned again in about an hour and found that the blood had penetrated the tampon, and a slight hæmorrhage still kept up. I then packed tightly the vagina with as much cotton as I could introduce, and confined it with a T bandage. This had the desired effect of stopping the flow. I had before ordered her to be perfectly still, with her head low, and to eat freely of crushed ice. I visited her again at 6 P.M. and found no hæmorrhage. Upon removing the tampon I found in the vagina, and partially protruding from the os, a large mass of hydatidiform bodies.

By introducing my finger into the womb I scooped out all of the mass I could reach, in quantity about a quart (which I here exhibit, except a portion which was lost by adhering to the bed clothes).

The patient then seemed so very weak and the uterus so extremely sensitive and tender, I desisted from making any further exploration, believing, also, that I had secured about all of its contents. After giving ergot as a precautionary measure, and enjoining perfect quiet and recumbency, I left her for the night. The next day I found she had passed a rather sleepless night; her pulse was 120 and very weak, and her temperature 101°. I ordered warm carbolized vaginal injections, and full doses of quinine with

opium, to procure sleep. She was given also milk, beef-tea and milk punch. On the third day her temperature was 99° and pulse about 112. From that time to the present she has steadily improved, and is now able to sit up, although still very pale and anæmic; has a good appetite, and is taking quinine and iron.

Another form of hydatidiform pregnancy is what is called the fleshy mole, also called the true mole in contradistinction from the false mole, which occurs without impregnation.

About twelve years ago Mrs. T., then about 30 years of age, came to consult me at my office. She was looking very pale and anæmic. She complained of great debility, loss of appetite, and inability to make any exertion or attend to her household duties. She further stated that she had not menstruated for five months. I examined her uterus, but could find no appreciable change or enlargement to indicate pregnancy. Her lungs showed no evidence of phthisis. I put her upon the use of iron, quinine and strychnia, with as much nourishing food as she could take. She improved rapidly. After visiting me at my office several times, each time expressing herself as feeling much better and gaining strength, she changed her place of residence and stopped coming. I thus lost sight of her for about five months, when one afternoon I received a summons to come to her immediately, as she was very ill. When I got there she stated that shortly before sending for me she had been seized suddenly with violent pains in her back and lower portion of her abdomen, accompanied with some discharge of blood, which alarmed her very much, but that soon after dispatching her messenger she was relieved, after passing something hard and solid through the vagina, which, upon inspection, proved to be a fleshy mole of the shape but rather larger in size than a hen's egg. She then informed me for the first time that some three years previous, whilst under the care of the late Dr. Benjamin Thompson, of this city, she had passed a similar lump of flesh.

In this instance she had not menstruated for about nine months, four months before she first came to my office, and five from that time to the day when I visited her at her house.

Our much respected President, Dr. Thomas C. Smith, on the 23d of September last reported to this Society two cases of hydatidiform moles similar to mine, and at the same time so thoroughly discussed in his paper all of the literature relating to the causes and formation of these productions, that I deem it unnecessary for me to occupy the time of the Society by saying anything more on this subject.

THE AMBULANCE TENTS AND WAGONS of Captain Tompkins received the diploma of honor at the Brussels Exhibition.

REPAIR OF A RUPTURED CHORION. REPORT OF A CASE.

BY W. L. SCHENCK, M.D.,
OF OSAGE CITY, KAN.

On the first day of June, 1888, I was called to see Mrs. James L., living six miles south of the city. She had been thrown from a heavy farm wagon which, turning over, struck her across the lower portion of the abdomen and hips with such force that she was unable to move her body or lower limbs for several weeks. She was seven months advanced in her sixth pregnancy. Active uterine pains came upon the second day after the injury, the membranes rupturing on the third with a free discharge of liquor amnii. Despite hypodermic injections of sulph. morph. and atropia, rectal enemata of tinct. opii, etc., the os dilated and the pains and discharge continued for three days, the pains steadily growing less forcible and the waters less abundant, when both ceased and there was gradual improvement in the general condition, but any attempt to walk was accompanied by a free movement of the pubic bones at their symphysis and severe pain in the right side and hip, and she maintained an almost immovable decubitus.

On the 4th of August, at the end of her 280 days, I was again summoned to the patient's bedside. The labor progressed rapidly, the membranes rupturing early, and on reaching the house a healthy boy of 9 pounds awaited my arrival. I removed the secundines, which were buttonholed in the vagina, and carefully examined them. The rent in the chorion through which the child had escaped was near its centre. About midway between this and its attachment to the placenta there was a triangular fold in the membrane (which is very prettily preserved in alcohol), that had united by adhesive inflammation. The chorion was separated from the amnion throughout one-fourth its extent, the inner membrane being thickened and presenting on its outer surface—in the vitriform body—an ecchymosed appearance, the spots of blood varying in size from a pin-point to $\frac{1}{8}$ inch in diameter, and being covered with a delicate film of membrane.

Though this case is unique, not having found in my reading a similar one, its possibilities are readily appreciated. There was a rent—solution of continuity—in a serous membrane, which was folded together and held by the parts adjoining so as to close the opening; there was consequent irritation and exudation, and a forced rest that permitted adhesive inflammation—a result that might more frequently obtain after such accidents if we could secure perfect immobility of the parts.

The injury to the mother in this case secured a fixed decubitus. The lesson to be learned from it is a more positive insistence upon perfect rest. We know not in what case we may have a fortunate folding and pressure of the membranes which, if

maintained, may be followed by adhesion and a successful termination of the pregnancy. Not only must *absolute* rest be enforced until there has been sufficient time for union by adhesive inflammation, but a reasonable quiet must be maintained until after delivery.

MEDICAL PROGRESS.

REGULATION OF FLUID INGESTA IN CARDIAC FAILURE.—In a paper on this subject Dr. J. BARR says :

Some time ago I had a patient who suffered occasionally from irritation of the urinary passages, with excessive excretions at times of uric acid, and at others of earthy phosphates. It was a case where the use of mineral waters might seem to have been indicated, but, as he had a feeble circulation, I cautioned him, before his visits in two successive years to two celebrated mineral water resorts, to be satisfied with the pure air and healthful exercise to be obtained in those elevated regions, without trying their supposed marvellous springs. On both occasions he was induced to consult a leading physician in each place, who understood all about the wonderful virtues of the waters, with the inevitable result that the waters were freely prescribed. On each occasion the patient returned much worse than when he left, and was afterwards quickly cured by a quinine tonic, and increased oxidation by healthful exercise in a place where there was no mineral spring.

I have, at present, under my care in the Northern Hospital, a patient who was admitted some weeks ago suffering from great mitral constriction, free tricuspid, regurgitation with evidence of commencing stenosis, great enlargement and hardness of the liver from chronic congestion, large ascitic effusion, general venous turgescence, and urgent dyspnoea. On a dry diet the patient has markedly improved; there is no dyspnoea, the venous turgescence has disappeared, the ascites has lessened, and she is now able to move about the ward, and has the prospect of returning home fit for light household duties. This woman has been several times in another institution, where she was kept on a liquid diet, and as she thought that an excessively morbid interest was taken in her case, on each occasion when she considered that she was near her latter end, she fled home to save a post-mortem examination.

Every drop of liquid which is placed in the stomach, with the exception of part of that which passes away in the faeces, must pass through the right side of the heart, and all of this, except that which is exhaled by the lungs, must pass through the left side before it can be excreted. When, therefore, there is any mechanical obstruction to the passage of the blood through the

heart, or, when the effective force of the heart is diminished, any increase in the amount of fluid in circulation must severely handicap the central pump. The velocity of the blood depends on the effective force of the cardiac contractions, and on the mass to be moved, and is inversely as the sectional areas. It therefore follows that when you have got a weak heart and a great amount of blood in the vessels, the circulation becomes very languid, and in a given time comparatively little is presented to the excretory organs. By the use of cardiac tonics to improve the force of the heart's beat, and by reducing the supply of fluid, thus lessening the bulk of blood, we lessen the static condition, and increase the velocity of the circulation. The potential is converted into kinetic energy, there is a more rapid interchange of fluids between the blood and tissues, the hydration of the tissues is lessened, while the oxygen-carrying power of the blood and the oxidation of effete products are augmented, the congestion of all the internal organs is diminished, and their functional activity heightened.

When there is any marked cardiac failure, the quantity of fluid consumed should be restricted to the smallest possible amount, and, in a large number of cases, one pint of liquid, including the fluid portion of the food, will be found sufficient, while if there be any dropsy, the quantity may, in many cases, be reduced still further.—*Provinc. Med. Jour.*, Aug. 1, 1888.

ALKALIES IN ECZEMA.—DR. FREDERICK PEARSE, acting on the principle that acids applied to an acid-secreting surface and alkalies to an alkaline-secreting surface diminish the respective secretions, has treated a large proportion of cases of eczema for many years by alkaline applications. The method may be termed unphysiological, on the ground that the morbid exudation of the eczematous skin has no parallel with the normal secretion of glands, but his answer for the present must be the results. There is not the slightest doubt that an acid applied to an eczematous surface will irritate and increase the exudation, and he is equally satisfied that alkalies, judiciously applied, will have a contrary effect. Whatever views we may have on the pathology of eczema, the great diversity of methods shows that at present we have no very definite *rationale* of treatment. At the same time he does not argue that alkalies have any specific action. No one who has seen much of eczema can doubt that the associated disorder to which these patients are most subject is that connected with their digestive organs. The internal treatment is therefore undoubtedly of paramount importance. The one thing which appears most successfully to meet this indication is some saline aperient, which produces a "weeping" from the mucous surface of the intestines and also hurries on the contents.

This clinical fact suggests that the cause of eczema lies in some imperfect process of digestion, whereby abnormal chemical compounds are absorbed and, circulating in the blood, irritate especially the skin structures. These compounds are unknown. Not only, however, are saline aperients successful in the treatment of eczema, but alkaline combinations are especially so. The most common prescriptions contain these drugs in endless variety.

This treatment is very successful for adult patients, but it is not nearly so useful in the eczemas of young children. In these cases, however, alkaline external applications are as successful as in those of riper years, if not indeed more so. Whether the fault in adult life lies in deficiency, and that of eczematous children in excess, of secretion of acid gastric juice, is difficult to decide; but the internal administration of alkalies combined with saline aperients, in the eczemas of grown-up people, is that on which the greatest general reliance can be placed. In children, however, an exactly opposite line of treatment will often be found successful. It is especially in scrofulous children and in infants that he has found benefit from the internal administration of hydrochloric acid. These little patients have generally some palpable digestive disturbance. He has frequently found unexpected benefit from the internal administration of nitrohydrochloric acid combined with sulphurous acid, at the same time pursuing the external application of alkalies. These latter may be used as solutions of bicarbonate of sodium (5 or 10 grains to the ounce), sometimes combined with small quantities of glycerine, or as weak solutions of liquor potassæ (10 or 30 drops to the ounce). As a general rule, it may be said that the more acute the eczema, or rather the more copious the exudation, the weaker must be the application. It should be made, whenever possible, continuously.

In chronic cases an alkaline ointment may sometimes be used, such as one containing 10 to 30 grains of bicarbonate of soda to the ounce of vaseline.—*The Practitioner*, October, 1888.

STRONGYLUS PARADOXUS.—M. J. CHATIN recently exhibited before the Paris Académie de Médecine a specimen of this intestinal worm, passed by a butcher, at Oloron, in the department of the Basses-Pyrénées. The patient had been subject for some time to gastro-intestinal disturbances, and had already passed another specimen of the same parasite. *Strongylus paradoxus* is a small round worm; the exhibited specimen measured a little over half an inch. The species was discovered in the lung of a wild boar, by Ebel, at the end of the last century, shortly after Modeer and Bremser discovered in Sweden and Vienna that this *Strongylus* infected the bronchial tubes of domesticated swine. Rayer found

the parasites, in the same anatomical situation, in a pig in the Paris market in 1844; two years later Bellingham discovered the parasite in Ireland. For long, experts have admitted that *Strongylus paradoxus* infests the lungs of swine, causing an affection which was rare till recently. Dr. Cobbold, in 1879, and M. Chatin, in 1881, both showed that swine were becoming more subject to this worm. The former pointed out its danger when a large number of worms collected in the bronchi. In 1850 the wild boars preserved for the Royal hunt, near Berlin, were decimated by this *Strongylus*. M. Chatin notes that no report of the existence of this species in man can be found in medical literature, but the alleged new species, *Strongylus longevaginat*, found infesting the lungs of a child, aged 6, at Klausenburg, Transylvania, in 1845, is evidently, in M. Chatin's opinion, identical with *Strongylus paradoxus*. Hence, in reality, the latter species has twice been found in man, and on the first occasion it infected the lung and caused death. The worm is very tenacious of life, and its embryo may remain in water, or completely dried up for a year without undergoing any change; yet, if then swallowed by a pig in fodder or drink, will rapidly develop and propagate. M. Chatin believes that in the case of Oloron the parasite was probably swallowed in drinking-water. Since swine are becoming more and more subject to *Strongylus paradoxus*, he thinks that sanitarians must be watchful, lest man should become frequently subject to the ravages of a worm liable, from its favorite habitat, to cause more mischief than can be wrought by *Tania*, *Oxyuris*, *Lumbricus*, or even the leech-like *Dochmius duodenalis*, which caused anæmia amongst the men employed in the St. Gothard Tunnel.—*Brit. Medical Journal*, August 18, 1888.

PAQUELIN CAUTERY IN EPIDIDYMITIS.—According to DR. BREWER, good results are derived from the use of the Paquelin cautery. He has employed this method in forty-six cases, and in two cases only was it necessary for the patient to remain in bed after the first application, and in one the real cause of the enforced rest was a co-existing cystitis. The details of the procedure, according to Dr. Halsted, who first suggested it, are as follows: The cautery point is heated to a white hot temperature, and the surface of the skin overlying the affected organ is then lightly touched with the cautery. The operation requires only a few seconds, and need not be more than moderately painful. A dressing of iodoform ointment is then applied, and the patient is instructed to wear a suspensory bandage. Instant relief from pain is said almost invariably to follow the employment of this treatment, and the patient, as a rule, is able to be up and walk about in comparative comfort. The author adds that he has also found that

marked relief from pain in gonorrhœal rheumatism can be obtained by a similar use of the cautery and iodoform ointment.—*Medical Press*, August 1, 1888.

TRAUMATIC SUBDURAL ABSCESS OF THE BRAIN.—In a paper on this subject, in which some cases are recorded, SIR WILLIAM STOKES draws the following conclusions:

1. That after the primary symptoms of cerebral traumatism have subsided, there is frequently a latent period of varying length, during which there are no distinct brain symptoms connected with abscess formation whatever.

2. That their appearance is as a rule sudden, and if uninterfered with, they run a rapidly fatal course.

3. That the occurrence of pus production resulting from cerebral traumatisms is not incompatible with a perfectly apyrexial condition.

4. That this latter fact will probably aid in differentiating traumatic cerebral abscess from meningeal or encephalic inflammation.

5. That both as regards color and consistence there is great variety in the contents of cerebral abscess cavities, and that as shown in Wilm's case, published by Rose, of Berlin, they may become transparent.

6. That antisepticism has largely diminished the risks of the operation of trephining.

7. That having regard to the great mortality of cases of cerebral abscess when uninterfered with, viz., from 90 to 100 per cent., that the operation is indicated even when the patient is in extremis.

8. That in the case where the trephine opening does not correspond to the situation of the abscess, exploratory puncture and aspiration may be employed.

9. That by the adoption of this measure the necessity for multiple trephine openings can be largely obviated.

10. That the employment of a blunt-pointed aspirating needle, as suggested by Rentz, is probably the safest mode of exploration and evacuation.

11. That drainage is desirable in the after treatment of such cases.

12. That both during and subsequent to operative interference in these cases a rigid antisepticism is imperatively required.—*Annals of Surgery*, Oct., 1888.

TREATMENT OF TYPHLITIS.—BOUCHARD'S method is as follows: Soothe the pain by a hypodermatic of morphia, if very sharp; if not use a thick layer of Neapolitan ointment with belladonna, covered by a large and very hot poultice. Give aseptic rectal injections twice a day, with at least a litre of water, to which is added 5 grams of borate of soda, and two or three teaspoonfuls of tincture of benzoin and camphorated alcohol

mixed. Give injections very slowly. Patient must have absolute rest. Give only the mildest purgatives, if any—such as magnesia in water. For diet, milk and alkaline water; later, milk with yolks of eggs. If there is at the end of a fortnight, a thickening around the cæcum, apply a small blister.—*Revue Therapeutique*, No. 4, 1888.

SUBSTITUTE FOR NITRITE OF AMYL.—MM. BALS and BROGLIO describe as the nitrous ether of dimethyl-ethyl-carbinol (amylene hydrate) a very mobile liquid, lighter than water, of an amber color, having an odor similar to that of camphor and terpine, insoluble in water, slightly soluble in glycerine, and very soluble in ether, alcohol and chloroform. While its physiological action is more marked than that of amyl nitrite, it does not cause flushing of the face, and as much as 80 or 100 drops can be inhaled daily.

ANTISEPTIC INJECTION IN SEPTICÆMIA.—MOIZARD, in a case of septicæmia occurring in pyo-pneumo-thorax, injected into the pleural sac an ounce of the following mixture:

Tincture of iodine.

Alcohol.

Solution iodide of potass. (1:10) āā 3ij.

The patient recovered, though the case was a very grave one.—*Union Médicale*, Aug. 11, 1888.

HYPODERMATIC INJECTIONS OF ANTIPYRIN.—DERLON advises the use of cherry-laurel water to obviate the pain of subcutaneous injections of antipyrin. He uses the following formula:

R. Antipyrin. grs. 30.
Cocaine hydrochlor. gr. 1.
Cherry-laurel water. 3j.

This should not be used with morphine injections, since chery-laurel water increases the pain in these cases.

COMBINED CHLOROFORM AND COCAINE ANÆSTHESIA.—OBOLISOVSKI proposes to inject cocaine at the site of operation after the patient is chloroformed. He claims the following advantages: 1. The local anæsthesia is more effective. 2. Vomiting occurs less frequently. 3. The waking is easier and the after-weakness less. Nervous subjects are sometimes much excited by the cocaine injection.—*Journal de Médecine de Paris*, Aug. 12, 1888.

SOWTHISTLE; SONCHUS OLERACEUS.—DR. S. F. LANDRY has investigated the hydragogue properties of this plant. It acts strongly on the liver, duodenum and colon, and resembles elaterium in causing large watery discharges. It has given good results in ascites and hydrothorax. It should be combined with carbonate of magnesium to prevent griping, or else with manna, aniseed, or some other aromatic stimulant.

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BACTERIOLOGICAL EXAMINATIONS AT
AUTOPSIES.

In reading recent medical literature, says BABES, it seems that a precise bacteriological examination is reserved for special cases of infectious diseases. He is convinced that bacteriological researches should be made systematically in all autopsies in infectious diseases. To this end, in the necropsy on man all the precautions should be taken as in the case of an animal; it should be made in a laboratory, where the micro-organisms in the tissues and organs may be collected. In the *Archives Roumaines de Médecine et de Chirurgie*, Babes has a contribution on the technique of such autopsies.

In the first, he says, scrupulous cleanliness of the hands should be observed. The cadaver may be preserved at a temperature of 5° or 6° C. The body should be washed with a 1:1000 solution of corrosive sublimate, and all the water used during the autopsy should be such a solution. The instruments should be sterilized in a stove. The first section of the skin, from the chin to the pubes, should include the subcutaneous cellular tissue and the muscles, and is made with one sterilized knife. Another sterilized knife is then used to open the peritoneal and thoracic cavities. The liquids contained in the peritoneal, pleural and pericardial cavities are then sterilized by plunging a platinum wire into them, and they

are then collected in culture tubes or on plates previously prepared. When these liquids are used for inoculating animals, a sterilized syringe should be used. For the bacteriological examination of organs, the surface of the organ is burned with a hot glass rod over an extent of about 2 cm. The tissue underlying the burn is then torn out. From this fragment is taken, by means of a red-hot platinum wire, a piece to be used for inoculation. The liquids contained in the intestines, bronchi, bladder, ureter, etc., are collected on gelatin plates. At the same time slides are prepared for micro-bacteriological examination by placing on them a few drops taken from the liquids, and leaving them to dry. By means of a sharp sterilized scalpel pieces are removed from the organs and placed in alcohol, for subsequent microscopic examination. At each autopsy at least a dozen slides should be prepared of the liquids and organs, and cultures should be made in moist chambers, and culture tubes with gelatin, agar-agar or serum. During the autopsy several guinea-pigs, rabbits and mice should be inoculated.

We do not know, says Babes, why in man the course of infectious diseases is so variable in different individuals. In the lower animals an experimentally produced infectious disease has, under the same conditions, the same type—an absolute identity, in animals of the same species. "Under the same conditions" seems a sufficient explanation, or at least the key, to the variable course of these diseases in man, since it is very seldom that we find human beings "under the same conditions." Babes says that in making autopsies under the best conditions for the collection of bacteria, he has found that this variability of symptoms in the same infectious disease in different patients is seen especially in cases of complication of the principal disease by secondary infections, also caused by bacteria. In connection with this the reader will remember the editorial article in THE JOURNAL of September 29, on Dr. Bayard Holmes paper on "Secondary Infection in Typhoid Fever." Two years ago Babes presented to the Medical Society of Budapest a bacteriological analysis of autopsies made at the Children's Hospital; and from this it seems that it is the bacteria of diseases consecutive to wounds that more often complicate the infectious diseases and cause death. In the bodies of children dead of infectious diseases, examined a short time after

death, streptococci and some of the five species of saprogenic bacteria are usually found.

An analysis given by Babes shows that it is well to search for and to cultivate the bacteria in all autopsies. Sometimes new bacteria are found, pathogenic for animals. Since in many of the internal diseases the complications that cause death are caused by the same microbes as are found in traumatism, it may be concluded that at some particular time, by reason of the primary disease, the tissues have lost their power of resistance to the invasion of certain bacteria. This is seen in that curious and exceptional complication, malignant œdema in the course of typhoid fever, as described by Brieger and Ehrlich. We must also take into account the frequency of complications due to the habitual association of certain bacteria with certain determined diseases. As an example of this may be mentioned cutaneous gangrene in malignant pustule, due to the presence of micrococci that constantly accompany the bacteria of charbon. In most cases, as already said, it is the bacteria of pus that penetrate the organs, and cause a septicæmia analogous to that caused by suppurating wounds. The chronic infectious diseases, such as phthisis and leprosy, often show local lesions caused by bacteria, as the streptococcus pyogenes, the diplococcus of pneumonia, and sometimes the tetragenus, in tuberculosis; these are habitual causes of the various complications on the part of the lungs or other organs. In leprosy staphylococci are often found. In actinomycosis the abscesses are often found to contain the staphylococcus aureus and streptococcus pyogenes, and it is very probable that the production of pus is due especially to the bacteria that enter secondarily, after the organisms that cause the primary disease.

There are also a number of diseases not caused by bacteria (or not known to be thus caused) that may become the seat of numbers of micro-organisms. This is true of certain tumors, which ulcerate and are invaded by colonies of bacteria. As a rule, tumors are less resistant to the invasion of bacteria than sound tissues. The paper of Babes is a very suggestive one, and his suggestions well worth careful consideration.

DR. JOS. M. WOOD, of Kansas City, died on September 19. He was born in 1810 in Kentucky, and began practice in 1830.

SIR DYCE DUCKWORTH ON MEDICAL BULLETINS.

In a recent lecture to the students of St. Bartholomew's Hospital SIR DYCE DUCKWORTH said: I am strongly of the opinion that at the present time a great deal of apprehension and unnecessary suffering is entailed on our patients, especially in the upper classes of society, by the details and clinical minutiae that too often and most improperly find their place in the bulletins respecting important persons. Such a practice should be firmly discountenanced on every account, and it is certainly satisfactory to know that it does not emanate from the highest ranks of our profession. I believe, further, that many of our patients suffer nowadays more, and are actually less amenable to treatment, than was formerly the case, because there is so much widely spread knowledge of disease conveyed in lay periodicals, and because so many advertisements of vaunted specifics and new remedies are puffed before the public.

Sir Dyce Duckworth said the foregoing in connection with the discussion in clinical lectures, before the patients, of the causation and morbid anatomy, and referred to the practice of the late Dr. Peter Mere Latham, who always withdrew his class from the bedside to discuss these matters. Sir Dyce thinks that such discussions are both inhuman and improper; that we have no right to discuss the horrors of the deadhouse in the presence of patients committed to our charge. While these discussions do not shock us, they may shock and greatly injure the patients, and we must never forget that it is our first duty to be humane, and to regard the patient's interest as first and paramount.

In regard to medical bulletins it may be said that they are the outgrowth of recent years, especially due to the so-called "enterprise" of the newspapers, which first persuaded themselves, and then the physicians, that the public must have all the details possible. In the case of distinguished persons there can be but little objection to the physicians letting the public know how they are in general terms; but it certainly is no business of the public to know all the minutiae of symptoms and treatment, how often a laryngeal mirror is used, a catheter passed, or a nutrient enema given. The newspaper writers and the public do not understand more than a small fraction of the medical terms used in minute bulletins,

and can get but an erroneous impression from them. The fierce quarrel now in progress between Sir Morell Mackenzie and the German physicians in the case of the late Emperor Frederick should be a lasting warning to physicians not to issue minute bulletins, nor air the progress of cases in the newspapers. In the case of a public man ill, the public is interested in the case only to the extent of knowing in a general way *how* he is, not why he is better or worse, what his daily symptoms are, and what the plan of treatment is.

As we all know, the physicians in a case cannot always agree; when they do not agree, and issue bulletins, these are sure to bring the whole matter of disagreement before the public. As a result we find in the newspapers such editorial comments as the following:

"The German bureaucrats are busy burning the book of Dr. Mackenzie. The work shows that it was not he but the native doctors who hastened Frederick to his grave. The physicians of Fatherland will reply with a hundred books at least, and the question of our youth, 'Who Killed Cock-Robin?' will be forgotten in the quest for the great healer who, for a fee of one hundred thousand, gave the sick Emperor that particular *coup* which served him.

"Yet Frederick is as dead as his ancestor, the great Elector. What do the doctors gain by revealing the foibles and the impotency of their profession? So long as no respectable man will die without the presence and attention of a doctor, why should not the learned men rest contented with the respect in which they are held?"

What do we gain but a certain amount of distrust on the part of the public, and too frequently a snub when we go before the public with a matter of importance to the public?

EDITORIAL NOTES.

HYSTERICAL SPASM OF THE ŒSOPHAGUS.—BORGIOTTI records an interesting case of a woman, aged 31, who, having had four attacks of hysterical convulsions, was taken with spasmodic dysphagia at the end of a fever that lasted two months; in addition to the dysphagia was pyrexia, frontal headache, severe pains behind the sternum. At each attempt to swallow, all food was rejected. This œsophageal spasm continued without interruption for 530 days. Oc-

asionally it could be overcome by means of a sound, but it rarely permitted the passage of even fluid food. The part of the œsophagus affected corresponded with the dorsal spine from the fourth to the seventh cervical vertebra; at this point the passage of the sound caused pain. The spasm was finally cured by means of Verneuil's œsophageal dilator. After the first dilatation fluid food could be introduced by means of the sound. On the sixth day the patient could swallow solid food. During the first six days the patient's weight increased five pounds, and the temperature, which had been subnormal for some time, rose to normal.

PREVENTION OF OPHTHALMIA.—DR. LITTLEJOHN, Medical Officer to the Hanwell School, London, at the conclusion of a report on ophthalmia in the central school district of London, summarizes his suggestions as follows: 1. The division of those attacked into small groups. 2. The appointment of a sufficient number of experienced nurses. 3. Abundant open-air recreation for those attacked. 4. A system of cleaning school-rooms, etc., which shall avoid damp boards as the result. Abundant ventilation, especially of dormitories; artificial warmth and extra clothing being utilized when needed. 6. Improvements in bathing and washing; including the provision of large open-air baths. 7. The washing and efficient disinfection of each towel after use. 8. More outing in the country lanes during half-holidays; together with provision of means for exercise and games. 9. Such arrangement of seats in the school-rooms that there shall be no strain on the eyes, and that the sun's rays shall not fall directly on the eyes.

ELECTROLYSIS IN PARENCHYMATOUS GOITRE.

—WEINBAUM, of Kovel, describes in a recent number of *Vratch* two cases of parenchymatous goitre cured by electrolysis. The electricity was applied for ten or fifteen minutes at a sitting, supplied by a battery of 20 cells connected with two gold needles; these were thrust several millimetres into the tumor at two points diametrically opposite. Moderately strong currents only were used. In the first case one hundred and fifty séances were had in eight months, during which time the tumor gradually dwindled away. The patient was seen about a year afterwards, and was in complete health. There was no trace of

the swelling except slight cicatrices at the sites of small ulcers made by the needles. In the second case there was but little left of the goitre after fifty séances, and the general health was much improved. Weinbaum tried electrolysis, but unsuccessfully, in a case of dense fibrous goitre.

YELLOW FEVER continues at Jacksonville, Florida, though the number of cases are greatly diminished. The number of new cases reported on the 22d inst. is 43, and deaths, 1. Of the new cases 8 were whites and 35 colored. The whole number of cases reported since the commencement of the epidemic in Jacksonville is 3,839, and the number of deaths to date, Oct. 22, 332. The danger of any general spread of the disease through the Southern States the present season has evidently passed, and most of the quarantine arrangements outside of Florida have been discontinued. The volunteer physicians who have been on duty at Jacksonville are reported to have tendered their resignations because their services are no longer necessary.

APPARATUS FOR RECORDING LATERAL CURVATURES OF THE SPINE. — DR. C. L. SCUDDER describes in the *Boston Medical and Surgical Journal* an apparatus that records :

1. The lateral curvature of the spinous processes of the vertebræ.
2. The outline, height, and breadth of the shoulders.
3. The outline, height, and breadth of the hips.
4. The relation between the arms in the natural position and the outline of the hips.
5. The distance of the scapulæ from the spine.
6. The antero-posterior curves of the back.
7. The curve of rotation in the dorsal region.
8. The curve of rotation in the lumbar region.

The tracings may be easily reduced for records.

AN ITALIAN MEDICAL SOCIETY, on the plan of the German Society of Internal Medicine, is proposed under the name Società Italiana di Medicina Interna. The proposition was to hold the first meeting in Rome this month. Discussions on any one subject are not to exceed one sitting, the introducers of the discussion being allowed half an hour, and subsequent speakers a quarter of an hour. Each introducer is to have ten minutes to close the discussion. Papers must be read within twenty minutes, and for the discussion of them each speaker is allowed ten

minutes, no person being allowed to speak more than once.

OUABAÏNE, $C_{30}H_{46}O_{12}$, is a crystallizable derivative of Ouabaïo, which belongs to the family Apocynaceæ and grows in the mountains of Comal, Eastern Africa. ARNAUD has isolated from the wood about 30 per cent. (!) of the substance he calls ouabaïne, which is slightly soluble in cold water, and very soluble in boiling water, and insoluble in chloroform, anhydrous ether and absolute alcohol. The physiological experiments made thus far show, according to Varigny and Langlois, and E. Gley, that its physiological action is similar to that of strophanthus.

A DECISION IN REGARD TO MORAL INSANITY has been given by the Supreme Court of Connecticut as follows (in *Anderson vs. The State*, 43 Conn., 515) : It is true that courts have been slow to recognize this form of insanity as an excuse for crime. Nevertheless, that it exists is well understood, and that in some cases it is clearly defined.

THE VACCINE AND EXPERIMENTAL LABORATORY of the University of Missouri, at Columbia, now announces through Dr. P. Paquine, State Veterinarian, that bovine vaccine will be supplied in the State of Missouri in the first week in November, and the first weeks of February, May and August, 1889.

THE JOURNAL OF OPHTHALMOLOGY, OTOLGY AND LARYNGOLGY, is the title of a new periodical announced to be commenced in January, 1889, in New York, and edited by Geo. S. Norton, M.D., assisted by Charles Deady, M.D. It is to be issued quarterly, at \$3.00 per annum.

THE SALINE COUNTY (KANSAS) MEDICAL SOCIETY was organized on August 28, with Dr. A. S. M. Anderson, of Salina, President, and Dr. J. R. Crawford, of Assaria, Secretary, and with a charter membership of ten. It meets on the last Tuesday of each month.

DR. GAMALEIA has gone to Paris to explain his system of vaccination against Asiatic cholera. He proposes to go to India in March, to test his methods on cholera patients.

THE SOUTH KANSAS MEDICAL SOCIETY will hold its semi-annual meeting at Hutchinson, Kansas, on November 13.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting April 25, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

DR. J. H. MUNDELL read the history of the case and presented the specimen of

AN HYDATIDIFORM MOLE.

(See p. 592.)

DR. SMITH stated that this was the fifth growth of this character presented to the Society within the past year, thus apparently militating against the statement that it is rare.

DR. PHILIP MARVEL read the history of a

CASE OF PLACENTA PRÆVIA.

(See p. 591.)

DR. MARVEL, in opening his paper, stated that he only wished to confine his remarks to the report of a single case. He had seen other cases, but did not have the requisite data. He interpolated that ergot and pulsatilla failed to produce contraction of the uterus, and that he had never known pulsatilla fail before.

DR. REYBURN had assisted Dr. Marvel in the case. He had regarded the case as hopeless when he saw the woman on the day of the delivery, on account of pulmonary phthisis and a narrow pelvis. She was almost exsanguinated and was without uterine pains—they being absolutely absent notwithstanding the administration of ergot, pulsatilla, stimulants, strychnia, liq. ammoniæ, etc. In reviewing the case he could not see anything that could have been done that was left undone.

THE PRESIDENT asked Dr. A. F. A. King to give the Society the recent orthodox treatment of placenta prævia.

DR. KING: The present orthodox treatment is gradual version by the bipolar method, and getting down one foot and letting it act as a plug, and then bringing down the child as gradually as the cervical relaxation will permit. It is very easy to criticise anyone's treatment of a case. No one man's practice could be taken as a criterion, on account of the small number of cases. But he strongly advised the German bipolar gradual version. He thought it was in just such a case as this that Simpson would have removed the whole placenta first, thus preventing hæmorrhage.

DR. FRIEDRICH had had a similar case on the 10th inst. The woman was in the water-closet and thought she was having a stool, but she was flooding. He tamponed and stopped the hæmorrhage. In the morning he removed the plug and the hæmorrhage began again. Dr. W. W. Johnston was called in consultation and advised him

to continue the treatment and wait for pains. Dr. J. returned at 10 P.M. and, there being some dilatation, they separated the placenta, turned and delivered, but the woman died about an hour later.

DR. KING: What did Dr. Friedrich mean by separating the placenta?

DR. FRIEDRICH: Partial separation.

DR. KING: Rupture of the membranes in the beginning without regard to the viability of the child was recommended.

DR. OBER had seen a lady about five months ago for another physician. Digital examination revealed a complete placenta prævia. The hæmorrhage had been very insignificant and there was absolutely no uterine contraction. He thought best to temporize. When the attending physician returned, about forty-eight hours later, he thought best to deliver at once, notwithstanding the flabby condition of the uterus, to which his attention was called. The doctor turned and delivered at once without an anæsthetic. Four hours after delivery and two hours after Dr. Ober had left the house, the woman died of post-partum hæmorrhage, though she was in excellent condition at the time of delivery. The child lived. In Dr. Friedrich's case the woman did not seem to be much affected by the anæsthetic, though hard to get under its influence.

DR. REYBURN, about three years ago, had seen a case with Dr. Morgan in which both mother and child lived. The head of the child descended and labor progressed well after partial separation of the placenta.

DR. SMITH thought it very unwise to trust to the head as a tampon acting against the margin of the uterus. He succeeded in delivering the child alive in a case in which he had previously used forceps, but the woman died. The next case he lost was one in which he had advised extraction of the child after a slight hæmorrhage upon walking about the floor. About two weeks later she flooded and was delivered by nature, and died of exhaustion about a week later. This case was seen with Dr. Burrows, who told him that he had seen "six cases of placenta prævia, five of which died and the other was not a case of placenta prævia."

DR. M. MUNCASTER favored the use of cannabis indica in 10 to 15 drop doses.

DR. MARVEL had seen four cases of placenta prævia: one in his own practice, two in consultation, and the one reported to-night. In his own case he thought it was hydrorrhœa at the first flow, and it was not until the second hæmorrhage, at the eighth month, when he made out partial placental detachment. In one case both mother and child lived. In three the mothers died. In two he used Barnes' dilators; in one turned. Would like to have heard something about the causes of placenta prævia. According to Goodwin, Mundé, Lusk and others, rapid labor should

be induced after the sixth or seventh month. Penrose taught to temporize at first, but if danger threatened to dilate and deliver. Goodell sanctions this.

Stated Meeting, May 16, 1888.

THE PRESIDENT IN THE CHAIR.

DR. ROBERT T. EDES read a report of
A CASE OF CEREBRAL TUMOR.

History.—A lady, aged 58, some three years ago had neuralgia in the head, which was cured, as she supposed, by massage. For two years she had epileptiform convulsions, together with slighter attacks resembling petit mal. Both were followed by temporary aphasia, and the more severe ones by slight signs of right hemiparesis. Headaches were neither frequent, severe nor localized. There was no hemianopsia, and the fundus of the eye, which, however, was not examined for nearly a year before death, was normal. A few weeks before death the aphasia and paretic symptoms became more marked and persistent.

There was a sarcoma on the left occipito-temporal lobe between the fourth convolution (lobulus fusiformis) and the posterior horn of the ventricle. The point of the temporal bone was softened. The island of Reil was swollen and pale, and under the microscope showed proliferation of the superficial layer and degeneration of the deeper pyramidal cells.

DR. SCHAEFFER had examined a tumor of this kind removed from a patient of Dr. J. T. Young. It was a sarcoma, situated in the left anterior lobe, and surrounded by a distinct capsule. The history was very meagre; headache was very prominent and was the only symptom dwelt upon by the physician. Mental derangement was absent. The tumor was adherent to the inner surface of the temporal bone, ovoid in shape, and one and a half to two inches long.

DR. KLEINSCHMIDT: The paper gives a correct history of a very interesting case. The diagnosis was in doubt and could only be made with difficulty. The recent advances in brain surgery make this case more important. Could it have been possible to have made out the location of the tumor in this case from the history? By no means. A lesion may involve either the frontal, occipital or sphenoidal lobe without showing any motor, sensory or special symptoms. This tumor was located in a locality of which we know the least. There was no disturbance of vision. Dr. Edes said there was amnesic aphasia and correctly believes that the lesion in the island of Reil was not the most important.

DR. EDES: The symptoms were due to the secondary lesion and not to the primary. It was not possible to have diagnosticated the location of the tumor from the symptoms.
(To be concluded.)

Gynæcological Society of Chicago.

Regular Meeting, Friday, June 29, 1888.

THE PRESIDENT, HENRY T. BYFORD, M.D.,
IN THE CHAIR.

DR. DANIEL T. NELSON presented a
SARCOMA OF THE OVARY WITH HALF-TWISTED
PEDICLE, REMOVED BY AUTOPSY.

I first saw the patient in consultation several days before she was taken to the hospital. She was a patient of Dr. J. E. DeWolf, of Englewood, whom I invited to be present to-night, but unfortunately, he had a professional engagement. She was taken to the Woman's Hospital, but operation was delayed from one day to another, waiting for her to improve in condition, which she never did, and we have the tumor here by post-mortem removal. Her history is very scant, and yet some points in it are of interest, and will raise queries that I trust some of you will be able to answer.

Mrs. M. entered the Woman's Hospital June 7, 1888; occupation, housewife; age at puberty, 12; age on entering the hospital, 39. She was born in America of French and German parents; twice married; the first time seven months, second time seventeen years. She was the mother of nine children, one by her first husband and eight by her second. After the birth of her last child, seven years ago, she did not menstruate for four years; since that time there have been irregular menstrual periods. It is so stated in the history, and yet I think we should rather say there were hæmorrhages from the uterus during these past four years. One year ago she noticed a fluid discharge from the rectum. This is a nice question in pathology, to my mind. She gave evidence of some inflammatory process in the right ovarian region—tenderness, soreness, some elevation of temperature, was confined to bed for a time, and there was a sudden discharge of a considerable quantity of blood. Such quantities are never rightly estimated, but the amount was guessed at by the patient at more than a pint, and supposed by her to have passed from the rectum. Perhaps that was not correct; at all events, after that bloody discharge, she was relieved of the swelling, the tenderness, the inflammatory process, whatever it was, and resumed her ordinary duties. Some time afterward, but unfortunately the record does not say how soon afterward, she began to suffer from swelling in the same region, that continued up to her death. There was constant soreness in the right inguinal region; three months ago the abdomen began to enlarge and she to gain in flesh, strength, and vigor, so that her attending physician, without making a local examination, and especially her neighbors, supposed she was pregnant. She felt

comparatively well until four weeks previous to entering the hospital, when she began to suffer severe pain, tenderness in the right inguinal region, and there was evidence of some kind of tumor. On going to bed with her last illness, about a week before she entered the hospital, her physician became satisfied that there was something more than pregnancy, that there was inflammation of some type. Some days before she entered the hospital I saw her in consultation, and advised a removal to the hospital in the hope that there might be some kind of an operation for her relief. On entering, her temperature was $100\frac{3}{4}^{\circ}$ F., pulse 104. The following day the temperature was $100\frac{1}{4}^{\circ}$ F., pulse 132; the following afternoon the pulse was 132, temperature 100° F. and a fraction. On the morning of the fourth day the temperature ran down to $99\frac{1}{2}^{\circ}$ F., and the pulse to 119. Possibly an operation might have been performed then, and her life saved, but a more convenient and better time was sought for, that never came. There were the usual evidences of peritonitis, and death in the usual way followed. When she first entered the hospital her bowels were moved, but not afterward; vomiting came on the third day, but passed off on the fourth, when probably an operation could have been performed with the possibility of saving life. She died on the sixth day after entering the hospital, and a few hours after death a post-mortem examination was made and this tumor removed. The appearance is somewhat changed now, but yet it presents fairly well the appearance at the time of the autopsy. You notice the dark, venous, congested appearance of a portion of the tumor. This was the anterior portion as it presented against the abdominal wall, very slightly adherent; no adhesions from old inflammation, either to omentum or other structures, but a *half-twisted pedicle*. The pedicle has been tied in such a way as to retain that appearance as much as possible. Here we have the broad ligament that is simply half-twisted and tied in that position on purpose. The evidence of completely twisted pedicle and death of the tumor were not present. There was simply an increase in size resulting from the congestion, but no sloughing, no death of the part—a slow, inflammatory process had taken place in the tumor and subsequently in the peritoneum, that was the cause of death. The obstruction of the bowels, I believe, was due to the peritonitis, and not to pressure from the tumor. It has not been my privilege to see a patient with a tumor and twisted pedicle, but it seems to me I could have recognized it; but this being only half-twisted, the circulation was impeded, not stopped. The tumor has been examined by Dr. Frank Carey, and the report is sarcoma. There was, so far as I saw, and I made a rather hurried examination, no evidence of the disease extending to other

organs; there is no evidence of it in the pedicle; there was no evidence in the glands or intestines or structures adjacent, so it seems as if it could have been entirely removed if the operation had been performed during the life of the patient. The uterus was a little enlarged, but no other evidence of disease about it. I made a diagnosis of malignant tumor, without being exactly certain as to its nature, but it seemed to me malignant on account of its rapid development and the age of the patient. I did not regard it as a uterine tumor, as the uterus was movable and the tumor seemed to be separate from it. Within the abdominal walls there was a considerable amount of ascitic fluid, so that the abdomen was very tense, and it was difficult to say whether or no the tumor could be moved readily within the abdominal walls. I was unable to say whether or no there were adhesions, but from the ascites I hoped not.

DR. ETHERIDGE: The doctor said that if the pedicle had been completely twisted he could have determined it. I would like to ask how?

DR. NELSON: The evidences of acute inflammation would have been much more rapid and severe, also the appearance of shock. In other words, the patient would be something in the condition of one with an internal hæmorrhage, there would be evidence of greater disturbance that would come on suddenly after exercise, while in this case there was no sudden beginning of the evidence of inflammation, it came on gradually.

DR. ETHERIDGE: Did you diagnose a solid tumor?

DR. NELSON: It seemed to me that it was; there was considerable fluctuation and ascitic fluid, but it seemed to me a solid tumor, and that was my reason, together with the age of the patient, for believing it was malignant. I supposed it was carcinoma and not sarcoma. I would like to ask whether that hæmorrhage, indefinitely described as from the rectum, could by any possibility have been the result of a congested condition of the tumor that was freed by an opening through the Fallopian tube, the pedicle having been untwisted, and whether the attack a year or more ago was similar to the one she died of, only the pedicle was more twisted this time, so nature could not relieve herself in this way. In reply to Dr. Etheridge, he said that the rectum was not examined.

DR. FENGER: As a rule, under other circumstances, malignant tumors have as one of their main characteristics invasion of the surrounding tissues and, consequently, adhesion and inflammation enough to bind the tumor to the surrounding organs. But we know that, in sarcomas or carcinomas of the ovary, it is common to find, as in this case, no adhesions. This fact is probably explained by the early setting in of ascites, as we know that the presence of fluid, ascitic fluid, saline solution, etc., in the abdominal cavity, helps

to prevent adhesive inflammation by keeping the tumor away from the loops of intestine.

DR. HENRY T. BYFORD: I examined the patient once, in life, and was present at the *post-mortem* examination. I satisfied myself that the tumor was not connected with the uterus, for although pressing upon the tumor moved the uterus, yet lifting the tumor did not. The course of the disease appears to have been, first, the twisting of the pedicle, then venous congestion, bursting of small blood-vessels, rapid distension and inflammation of the tumor, especially on the side that we now see to be black. The case was not one of ordinary peritonitis; there was not much tenderness, except when the tumor was directly pressed upon. Intermittent attacks of partial obstruction of the bowels, due, undoubtedly, to the presence of this heavy tumor, hastened her death.

DR. CHRISTIAN FENGER presented a

FIBRO-CYSTO-SARCOMA OF THE UTERUS.

This specimen was removed by laparotomy from a woman of 35, who had a tumor the size of a child's head, immovably connected with the uterus at the fundus, and also two small myomas that could be felt through the vagina. The large tumor showed fluctuating places on the surface, by palpation through the abdominal wall, and I concluded that it was an ovarian cystoma, either located in the broad ligament or sufficiently adherent to the uterus to make them move together. At the operation I found it to be a cysto-fibroma, or fibro-cysto-sarcoma, subperitoneal, but attached by the broad base to the uterus at the fundus. After temporary elastic constriction around the cervix, the tumors were enucleated, and as the uterine cavity was not opened, I united the wound of the wall of the uterus with buried step sutures, deep and superficial, and a final continuous suture along the inverted borders of the peritoneum.

At the close of the operation all hæmorrhage had apparently stopped, consequently I did not drain. In the course of the first week some fever set in, and on the tenth day I reopened the lower border of the wound and evacuated about three to four ounces of blood mixed with pus, from a cavity surrounding the body of the uterus. The evacuation and subsequent washing out and drainage did not have much influence on the patient's condition; the fever continued, she had a large gangrenous bed-sore over the os sacrum and died six days later, in the third week after the operation. The autopsy showed no peritonitis, and the cavity with the accumulation of blood and pus was found entirely separate from the general peritoneal cavity. On examining the uterus I found, as you see here, surrounding the line of the uterine wound, an island of gangrenous tissue including the wound and a square inch or more to each side.

This gangrene explains the persistence of fever and sepsis, notwithstanding the evacuation and drainage.

The large inner tumor has, you see, a smooth surface. On the cut surface, in some parts, there was an appearance of myoma, in other places, islands of softer tissue looking like myxoma or sarcoma, and in other parts cystic cavities. These cysts have not the usual shape and appearance of cystomata, but are irregular, triangular, or longitudinal sinuses, the walls of which are not smooth but trabeculated, so as to give the appearance, as Dupuytren describes it, "similar to the walls of the ventricles of the heart."

I shall here make a few remarks on fibrocystomata of the uterus, because they are comparatively rare, the whole number described in the literature not being much above 100. Fibrocystomata are, as the name indicates, forms of fibromata or myomata, and it is a comparatively rare change in the preëxisting elements of these tumors that gives them the additional characteristics of cystomata.

We distinguish between the following varieties: myxomyoma, as described by Virchow, characterized by œdema of the interstitial tissue, and by the fluid in the spaces containing mucin; consequently it is something more than a simple œdema of the myoma. Spread islands of embryonal cells are also proof of a more active process, terminating in myxomatous or even sarcomatous tissue. Besides the œdema in the interstitial tissue of the myoma, we find œdema and atrophy of the muscular fibres, isolated fibres or their débris mixed with the fluid in the cavities. These cavities are of all sizes, from the microscopic, as shown on this slide, up to the size of a pin's head or walnut, and we even find cavities of enormous size, containing several quarts of fluid. The cavities are lined with pavement-celled epithelium, or rather endothelium, as you would expect, since they originate from dilated lymph spaces, or naked when the cavity is formed by the disintegration of muscular fibres. The cavities contain clear, colorless, or bloody fluid that often coagulates spontaneously when evacuated—a fact that Atlee pointed out as a differential diagnostic sign in contradistinction to the fluid from ovarian cystomata. A special form is described as fibromyoma lymphangiectodes, by Leopold. Distinctly different from this is the myoma teleangiectodes sive cavernosum of Virchow, with multiple cavities from the size of a millet-seed to that of a pea, communicating with the blood-vessels and consequently containing pure blood. These tumors are found to enlarge during menstruation (Virchow), and on auscultation a bruit is heard (Péan).

As to the place of development, the great majority are subperitoneal. Of the 70 cases gathered from the literature by Heer, 63 were subserous, 5 interstitial and only 2 submucous tumors. They

sometimes attain an enormous size, weighing 29, 40, and in one case even 81 lbs.

The cystofibromata are most often found between the ages of 30 and 50. The symptoms are in the main, of course, the same as those of common myomata and fibromata. Uterine hæmorrhage is rare because, as before mentioned, they rarely develop close to the mucous membrane. A more characteristic symptom is a sudden enlargement, probably from acute increase in the size of the cysts or from intracystic hæmorrhage. The spontaneous coagulation of the fluid would be a valuable symptom if it was constantly found, but in about seventy cases it was noted in only eleven (Heer). It might, however, in reality be more frequent, since in a number of cases it might not have been noticed (Gusserow). The lack of vitality shown by the tendency to local gangrene is also somewhat characteristic of these tumors. Thus Grammaticati, as stated by Gusserow, saw a myoma the size of a child's head, located in the wall of the cervix, undergo superficial necrosis, followed by sepsis and death.

It is rather noteworthy that a correct diagnosis was rarely made. They were almost always taken for ovarian cystomata, and a number of them were punctured. Puncture, however, in this form of cystoma, is far more dangerous than in other cystomata, as shown by Leopold, who found that, as a consequence of puncture, ten patients out of eleven died. McGuire, therefore, is right in asserting that exploratory laparotomy is less dangerous than puncture.

The treatment should be early extirpation, because of the probability of rapid enlargement, the danger of puncture, the liability to gangrenous or septic changes, and thrombosis of the vessels in and around the tumor. Gusserow gives a series of 41 laparotomies with 22 recoveries, the cause of the high mortality being the necessity of the removal of the uterus in some of the cases. Occasionally the operation cannot be finished; thus, according to Gusserow, in 38 cases, 7 were unfinished, and of the 7, 6 patients died. That an exact diagnosis, with a definite premeditated plan of operation, is of extreme importance, is shown by Gusserow, who, out of 11 cases described in the literature, reported 9 recoveries.

A few words about uterine sarcomata, inasmuch as the tumor here presented is a mixed form of cystofibroma and sarcoma. In the uterus we distinguish between circumscribed and diffused sarcomata, the former originating in the muscular wall of the uterus, the latter in the mucous membrane. The circumscribed uterine sarcomata are of the most interest to us in this connection, as they stand in near relationship to fibromyomata and fibrocystomata. They form, usually, round, circumscribed, harder or softer tumors, looking like, and developing in the same places as the fibromyomata, and so similar to these that we

must class the relapsing fibromata of Paget among the sarcomata. But besides more or less typical fibrous or muscular cells, here we find islands of short, spindle-shaped, round or polymorphous cells, or islands of myxoma tissue; in general, a more vivid cell-formation than in fibromata and myomata; and we further find in the same tumor in different places different forms of cells. So predominating, however, are fibroma or myoma tissue cells that Schröder regards it as a law that the circumscribed sarcomata are always formed by transformation of fibromata. According to Gusserow, the transformation of fibromata into the mixed form of fibrosarcomata, myxosarcomata, and cystosarcomata is so rare that the literature shows very few well-observed cases of this kind. By examining the microscopic slides that I exhibit to-night we find, in some portions, apparently typical myofibroma tissue, without or with dilated lymph spaces, in which we find granulated matter containing loose or isolated muscular cells; in other places, islands of typical myxoma tissue, here and there islands of embryonal cells; in another part of the tumor, territories of short, spindle-shaped cells, large and with oval or round nuclei; in other words, islands of unmistakable sarcoma tissue; and finally, places of common typical, round-celled sarcoma tissue.

As to the age in which fibrosarcomata of the uterus are found, there is this difference from the cystofibromata, that, while they both are most common between the ages of 30 and 50, the sarcomata are still common between 50 and 60, while the cystofibromata, as we have seen, stop at the age of 50.

As regards treatment, the sarcoma is a malignant tumor and needs more extensive removal or radical treatment than the benignant cystofibroma. The removal of subserous or interstitial fibrosarcomata by abdominal supra-vaginal extirpation and extraperitoneal treatment has often been followed by a growth of sarcomatous tissue in the cicatrix in the abdominal wall. The abdominal total extirpation of the uterus can hardly be said to have lost much of its dreadful mortality of about 70 per cent., from the time of Freund's first operation till now.

In the treatment of this case, the following suggestion occurred to me—a suggestion which was not carried out because of the patient's death. I should operate as I did, enucleating the subserous tumor, and if the uterine cavity was not opened, try intraperitoneal treatment of the stump. After recovery from this operation, if the microscopic examination of the tumor proved it to be a fibrosarcoma, I should follow, as soon as the patient's strength would permit, by vaginal extirpation. In the rare cases in which the size of a diagnosed circumscribed uterine sarcoma or fibrocystoma will permit of vaginal extirpation, this operation is, of course, the only one indicated.

effected. A number of daily sittings was generally required, and in some cases it was necessary to keep them up for months. In any case of supposed cure, however, there would always arise the question whether the disease had not simply run its course and ended spontaneously. There was the most ground for hope in those cases in which the movements were general, and the previous existence of rheumatism and endocarditis did not seem to render the chances of relief less favorable. In insanity the results from hypnotism had not for the most part been satisfactory. He had seen it tried quite extensively at Zurich, but had never observed any benefit from it that was not evanescent. In delirium tremens its effect was often excellent, and quiet useful sleep was sometimes secured by it in cases in which the same result could only have been attained by the use of drugs in doses so large as to be dangerous. Alcoholism constitutes one of the most hopeful fields for its employment. The *séances* should be given twice daily for several months, and in many cases was said to become inspired with a complete disgust for drink. The opium, chloral, cocaine and tobacco habits could probably be also successfully treated in the same way; but in all these cases surveillance in an asylum was, of course, an indispensable feature of the treatment.

Masturbation and other bad habits, he continued, had been cured by hypnotism, and perhaps no more satisfactory results had ever been observed from its use than in incontinence of urine in children. Lieboldt had employed it in 77 cases, with a very large percentage of cures. The average age of the patients was 7 years, and in two of those cured there was incontinence of feces in addition to the enuresis. The results obtained were the more gratifying from the fact that many of the cases had resisted all the ordinary methods of treatment. In various rheumatic affections Bernheim and others had reported partly satisfactory results. In some chronic joint cases it was claimed that not only was the pain diminished, but that the nutrition of the joint was actually improved by the treatment. Dr. Herter thought it very doubtful, however, whether any real effect upon the joint was produced. In neuralgia much benefit could be expected in recent cases, but if the trouble was chronic there was less chance of success. Still, in some old cases of sciatica good results had been claimed, and at all events the method might often be of service in securing sleep, even if no permanent benefit could be looked for. In functional headaches it was of decided advantage, and in certain instances of migraine he had been successful in mitigating and cutting short the attacks by its aid.

At first sight it might seem that such an agency as this could have no effect upon a function like menstruation; but he said it had been practically demonstrated that in some cases not only the in-

terval between the periods, but the length of the periods themselves, could be absolutely controlled by it. The number of individuals in which such results could be looked for, however, was comparatively few. As to the employment of hypnotism in surgery as a substitute for the ordinary anaesthetics, the number of patients, with the exception perhaps of children, in whom it was available for major operations was no doubt small; especially as the anticipation of having an operation performed was extremely apt to interfere with the success of the hypnosis. On the whole, he thought its employment in this field was not to be recommended, except in cases where, for any reason, the use of anaesthetics was contraindicated. He had, however, seen a molar removed under its influence without the patient's suffering any pain or, indeed, having any remembrance afterward of the extraction of the tooth. In parturition Dr. Herter said that sufficient experience had now been accumulated to prove that hypnotism is in no wise prejudicial to efficient uterine contraction, and that it has no tendency to produce *post-partum* hæmorrhage or other bad results. At the same time he thought it was in no way comparable to chloroform in labor, and ought only to be used in those rare cases where the usual anaesthetics are contraindicated. In insomnia it could often be employed with good results, but it sometimes required months of persevering treatment to effect a cure. In cases where drugs had been resorted to it could be used in addition to the habitual remedy; the dose of the latter being gradually diminished, and perhaps finally replaced by a placebo.

Among the objections that had been raised against the employment of hypnotism he mentioned the following: 1. It tends, in certain susceptible subjects, to produce temporary mental alienation; some individuals thus developing hallucinations during wakefulness. 2. Some individuals fall asleep spontaneously; showing a tendency to auto-hypnotism. 3. Some can be readily put to sleep by any one who chooses to do so. Such bad results as these Dr. Herter thought could, for the most part, be entirely antagonized by suggestion.

In conclusion, he proposed the following general rules for those desiring to practice suggestive therapeutics:

1. Never hypnotize any subject without first obtaining his or her formal consent.
2. Always hypnotize in the presence of a third person.
3. Never give any suggestions other than those which are necessary for the patient's improvement in health.

Public exhibitions of hypnotism he believed should be prohibited by law, and the use of this agency confined exclusively to the medical profession. One advantage connected with its employment in medicine was that it does not lose its

effect by repetition. On the contrary, the subject becomes more and more readily influenced by it the oftener he tries it. From what had been said he thought it could be seen that suggestive therapeutics was not a delusion, and he said he had no doubt that before many years it would be assigned a regular position in medical service. At the conclusion of his paper Dr. Herter demonstrated on a female subject the method of inducing hypnosis.

The Chairman of the Section, Dr. W. R. Bird-sall, next read the report of a case of violent tremor of the right forearm, which he believed to be of hysterical origin, although the patient was a young man, and which was successfully treated by hypnotic suggestion. In concluding it he said he thought we were not justified in wholly disregarding a method of treatment which had already shown itself useful in many nervous troubles; though, of course, he did not mean to contend that we should by any means attempt to treat all classes of cases by hypnotism, and thus place ourselves on a level with the faith healers and Christian science people.

Dr. Osgood Mason then read a paper based on six cases of hypnotic treatment, in which he gave his deductions as follows:

1. It is of decided value as a therapeutic agent.
 2. Sleep is not always necessary for the production of the greatest benefit.
 3. It has the effect of equalizing the circulation.
 4. It also regulates and equalizes nervous action.
- Corollary.*—The equalization of the circulation is the result of the equalization of nervous action.

The last paper was one on *The Therapeutic Value of Hypnotism*, by Mr. Corey, of Boston, Chairman of the Committee on Hypnotism of the American Society for Psychical Research. In the course of it he spoke particularly of the results obtained by Mr. Voisin in certain cases of insanity. He also referred to many of the affections spoken of in Dr. Herter's paper, and expressed the opinion that hypnotism was destined to prove of great service in properly selected cases in medical practice. In the latter part of it he dwelt at some length upon the medico-legal aspect of the subject, and spoke of the danger that susceptible individuals might be caused by the unscrupulous to commit criminal acts while in a state of hypnotic trance.

In the discussion that followed Dr. Kremer, after relating some cases that he had had, stated that in one instance he had considerable difficulty in arousing the patient, while in several others he found that the treatment gave rise to headache and malaise. On the whole, he said, his experience with the method, which was confined to six or eight cases of a neurasthenic or hysterical character, had not been very favorable.

Dr. C. L. Dana referred to two or three cases, and then said that it was rather a curious coinci-

dence that just at the time when the convention of the "Christian Alliance," composed of those who believed in faith healing, was treating the subject of suggestive therapeutics empirically, it should be discussed at the Academy of Medicine from a rational point of view. He said that five or six years ago, when the method of Bray was in vogue, he had paid considerable attention to hypnotism, and he had known of one subject, a young girl of nervous temperament, who was affected with convulsions in consequence of the treatment. While the method of Bernheim and Lieboldt was much less objectionable, he did not think the practical application of hypnotism was of very wide range. There were comparatively few individuals who were suitable subjects for treatment by it, and there were not many physicians who were willing to devote the time necessarily required by it. Dr. Dana thought the so-called faith cure and Christian science should be prohibited by law, and expressed his opinion that it was better for a person to remain ill rather than to be cured by such agencies, because they tended to produce paresis of the will and eventually bring about a certain amount of volitional degradation.

Dr. Herter said, in reply to Dr. Kremer, that he had never found any difficulty in arousing a patient from the hypnotic sleep, although he had seen the method tried in over 100 subjects. The only exception was in an individual who had been in a spontaneous condition of trance previously. He did not think this a valid objection to hypnotism, and as to the headache and malaise referred to, he believed these could always be prevented by suggestion before allowing the patient to waken. He agreed with Dr. Dana as to the bad effects of Bray's method with the bright light, which had been known to give rise to epilepsy and convulsions; but said he was not aware of any evil results having been noted from the method now employed. He had never noticed any depressing tendency about the treatment, and, as far as his experience went, he believed it was comparatively easy to hypnotize quite a large proportion of individuals in the community.

P. B. P.

MISCELLANEOUS.

DIPHTHERIA SPREAD BY CATS.—Domestic animals have often not only been suspected but found guilty of spreading infection. In his report on the recent sustained prevalence of diphtheria in Enfield, Dr. Bruce Low of the medical department of the local government board incidentally states that during the continuance of the epidemic cats were observed to suffer in considerable numbers from illness, and in December, 1887, and in January, 1888, there was a large mortality among those animals, so much so that the attention of the dust contractor was directed to it. He stated that never in his previous experience had he seen so many dead cats in the

dust heaps. Some households seeing their cats ill, destroyed them. Though there were no known cases of diphtheria occurring in the practice of the veterinary surgeons at Enfield, yet they saw many cases of "influenza" at this time among animals. The following is an illustration of the possible connection between diphtheria in children and in cats: A little boy was taken ill with what turned out ultimately to be fatal diphtheria. On the first day of his illness, the cat, which was in the room at the time, licked the vomit on the floor. In a few days (the child meanwhile having died) the animal was noticed to be ill, and her sufferings being so severe and so similar to those of the dead boy the owner destroyed her. During the early part of its illness this cat had been let out nights in the back yard, as usual. A few days later the cat of a neighbor, who lived a few doors further off was noticed to be ill. It had also been out in the back yards at night. The second animal, which, however, recovered, was the pet and playfellow of four little girls, who, grieved at the illness of their favorite, nursed it with great care. All four girls developed diphtheria, the mother being convinced that they got it from the cat; and, indeed, no other known source of contact with infection could be discovered. It is easy to imagine cats catching infectious diseases like diphtheria when we remember how often milk and other unused food from the sick-room is given to the cat, or by some people thrown out in the back-yard for the benefit of their neighbors' cats if they have none of their own. It is a frequent occurrence to see children carrying cats in their arms, and even kissing them. It is obvious that if the cats were ill with diphtheria the children, under such circumstances, would almost inevitably contract the disease.—*London Sanitary Record*.

ACTIVITY OF THE SCARLET-FEVER POISON AFTER A YEAR.—Dr. J. Brook, Surgeon U. S. Army, of Fort Monroe, Va., communicates the following case: "A girl aged about eight, living at this place, was some months ago attacked by scarlet fever, the disease running a typical course. For a long time no possible source of contagion could be discovered. The child had not been absent from home, had been with no one lately exposed, and no other case was known to exist anywhere in the vicinity. Subsequently I learned that one of the house-servants had nursed a case of scarlet fever in a distant city just about a year before. After the case terminated she packed some of her things, including some clothing then worn, in a trunk, and left the place. A year later she had the trunk sent to her here, opened it, and took out the contents, the little girl being present and handling the things. Very soon after the latter was attacked, as stated.

"As fixing the period of incubation, it would be interesting to know precisely how many days passed from the time the trunk was opened until the disease appeared; but I was unable to determine that period satisfactorily."—*The Medical Record*.

INQUESTS OF DEATHS FROM PREVENTABLE DISEASES.—At the Paddington Vestry on Tuesday last a resolution was submitted from the Sanitary Committee, setting forth that several cases of death from preventable diseases having been reported to them under circumstances which suggest that the cause has been defective sanitary arrangements, and that the Committee is of opinion that in all such cases application should be made to the coroner to hold an inquest as to the cause of death, and recommending that a copy of the resolution be sent to all the vestries and district boards of the metropolis. It was further suggested that copies should be forwarded to the medical practitioners in their respective districts. Dr. Danford Thomas approved of holding an inquest where there was evidence of gross sanitary neglect.—*British Medical Journal*, Sept. 22, 1888.

DR. E. MILLER REID has recently been elected to the Chair of Physiology and Hygiene in the Baltimore University School of Medicine.

DR. F. R. CAMPBELL, a talented physician and writer of Buffalo, died of typhoid fever on September 14, at the early age of 28 years.

DR. HARVEY JEWETT, of Canandaigua, N. Y., died on September 4, aged 79 years.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from October 13, 1888, to October 19, 1888.

Capt. Edward T. Comegys, Asst. Surgeon, is relieved from duty at Madison Bks., New York, and will report in person to commanding officer, Ft. Bayard, N. M., for duty at that post, relieving First Lieut. William D. Dietz, Asst. Surgeon.

First Lieut. Dietz, on being relieved by Capt. Comegys, will report in person to commanding officer, Alcatraz Island, Cal., for duty at that post, reporting by letter to the commanding General Dept. of California. Par. 18, S. O. 240, A. G. O., Washington, October 15, 1888.

By direction of the Secretary of War, the following named officers of the Medical Department will report in person, on October 23, 1888, to the President of the Army Medical Examining Board, Army Building, New York City, for examination for promotion: Capt. John de B. W. Gardiner, Asst. Surgeon; Capt. William C. Gorgas, Asst. Surgeon; Capt. C. N. Berkeley Macauley, Asst. Surgeon; First Lieut. W. L. Kneeder, Asst. Surgeon; First Lieut. Edgar A. Mearns, Asst. Surgeon. Upon completion of their examination the officers named will rejoin their proper stations. Par. 1, S. O. 239, A. G. O., Washington, D. C., October 13, 1888.

Capt. Benjamin Munday, Asst. Surgeon, is relieved from duty at Jefferson Bks., Mo., and will report in person to the commanding officer, Ft. Sisseton, Dak., for duty at that post, relieving First Lieut. John L. Phillips, Asst. Surgeon, and reporting by letter to the commanding General, Dept. of Dakota. Par. 11, S. O. 242, A. G. O., Washington, October 17, 1888.

First Lieut. Phillips, on being relieved by Capt. Munday, will report in person to the commanding officer, Ft. Lyon, Col., for duty at that post, reporting by letter to the commanding General, Dept. of the Missouri. Par. 11, S. O. 242, A. G. O., Washington, October 17, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending October 20, 1888.

Surgeon A. F. Magruder, ordered to Marine Bks., Washington, D. C.

Asst. Surgeon E. P. Stone, detached from the "Richmond" and to the "Minnesota."

Asst. Surgeon J. F. Keeney, detached from the "Minnesota" and to the "Richmond."

Asst. Surgeon A. M. D. McCormick, detached from the Bureau Medicine and Surgery, and to the "Vermont."

Surgeon A. M. Moore, detached from naval station, New London, Conn., and to the "Kearsarge."

P. A. Surgeon A. A. Austin, ordered to naval station, New London, Conn.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending October 20, 1888.

P. A. Surgeon S. T. Armstrong, granted leave of absence for sixteen days. October 17, 1888.

Asst. Surgeon R. M. Woodward, when relieved at Marine Hospital, Boston, Mass., to proceed to Marine Hospital, Chicago, Ill., for duty. October 12, 1888. Granted leave of absence for thirty days. October 17, 1888.

Asst. Surgeon A. W. Condict, relieved from duty at Marine Hospital, Chicago, Ill.; ordered to Marine Hospital, Boston, Mass. October 12, 1888.

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ORIGINAL ARTICLES.

THE SCHOOLROOM A FACTOR IN THE PRODUCTION OF DISEASE.

Read in the Section on State Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY J. A. LARRABEE, M.D.,
OF LOUISVILLE, KY.

This is the first time in the period of my membership in the Association that I have had the honor to appear before your Section. I am satisfied that this affliction has been put upon you by mistake in making up the schedule for the last year. Most of my time is spent in the Section of Pediatrics. It may be truly said that any doctor who has practiced his profession for a score of years has in that time become a true philanthropist. That he will always be found to take the greatest interest in whatever concerns the welfare of the human race. Obedient, therefore, to your call, with the desire expressed, I have hastily prepared a few words upon a subject with which I am brought into daily contact. A subject which not only concerns the present, but also the future health of children.

It is a fair general estimate that one-third of the lifetime of every educated person is passed in the schoolroom. It follows, therefore, that the location, construction and surroundings are all matters of importance. It is gratifying to know that a great advance has been made in cities in these particulars. If, however, education means the development as well as the training of the mind, there is still much to be desired. Every schoolhouse should be located with a view to the free admission of sunlight and fresh air. In Switzerland the summits of small hills are selected as the proper location. The building should be made attractive to the eye in every possible manner. Ocular impressions are powerful educators. Manufacturing corporations in our eastern cities and villages appreciate this as bearing not only upon the physical health, but also the happiness and contentment of their operatives. The immense cotton factories which one sees in New England present the appearance of palaces, surrounded as they are by parks, lawns; with fountains and rare and beautiful flowers. I have

been told that the proprietors are abundantly repaid for this great outlay of money in the moral and physical welfare of their tenants. But the operatives in mills and workshops ought not to be compared with children. Men and women can withstand the effects of vitiated air and unhealthy surroundings for years without serious danger to their health. The susceptibility to disease from such causes is in inverse proportion to the age of the individual. The inside of the schoolroom should also be made attractive. Instead of blank walls there should be paintings, historical and instructive. Pictures are wonderful educators.

Ventilation, although universally acknowledged to be of the utmost importance in maintenance of health, is still very faulty. The hot-house plan prevails. The fault is not so much with the teachers as with the home. Children reared in stove or furnace heated homes are chilled at a temperature of 66° F. in the schoolroom. This temperature is quite sufficient if begun in the autumnal commencement and kept up all winter. The desire for more heat arises from over-exhaustion and depletion by brain-forcing study, or want of proper exercise in the open air. The cubic space of air to each scholar varies in our schoolrooms from 200 to 300 feet. Prof. Kedzie fixes 300 as the maximum limit for health. This would necessitate an entire change of air about every fifteen minutes to prevent re-breathing. An ordinary schoolroom would require 175,000 cubic feet of air per hour. There can be no doubt that this amount of fresh air is needed. How to obtain such ventilation without exposure to draughts must be a perplexing question to every teacher.

The top and bottom protection slide, or better, the middle-joint sash ventilator ought to be enforced. The science of respiration has demonstrated that the largest amount of carbonic acid compatible with life is 7 parts in 10,000. These estimates are made in mines, where the dimly-burning candle and the miner's lamp are extinguished. When, however, the carbon dioxide present is due to overcrowding a much smaller amount becomes oppressive. In closed churches and theatres a drowsy audience is not always the fault of preacher or actor.

The schoolroom is a propaganda of contagion. The opening of schools in the autumn is the sig-

nal for the outbreak of contagious diseases rekindled from the still smoking embers of the last year's epidemic. There is no remedy, save in the formulation of discreet rules and their rigid enforcement by the authorities. Children come to the schoolroom from every sort of home, the unclean and the clean. Those wearing soiled clothing mingle with the neat and tidy. No schoolroom should have an odor, and no teacher should be employed whose olfactories are at all blunted. There is a prison smell, a hospital odor, a lying-in odor, etc., and there is a school odor, and wherever these exist there is disease and death. Right here is the place to begin the practical instruction in hygiene. Impressions made upon the growing mind are lasting for good or evil. It is very hard to convince people of the necessity of caring for their bodies after they have formed habits of uncleanliness. This is the reason that we meet with so much opposition in enforced sanitation. We shall never accomplish much in public hygiene until we commence with the school room. Wash-rooms, clothes-rooms, shoe-rooms, are necessary attachments to every schoolroom.

School Headache.—This is one of the most common complaints among pupils. The cephalalgia is frontal—often supra-orbital. There is always a slight elevation of temperature—and anorexia. Oculists have written upon the frequency of such headaches, and attribute the attacks to overstrain of the eyes. As a result we see boys and girls below their teens *wearing glasses*. Such cases are very common in my practice and I have almost invariably found them due to constipation, which may be attributed to sitting, but more especially to inattention to the calls of nature. The evacuation of the cæcum depends very much upon the contraction of the neighboring muscles, the psoas and iliacus, as in walking. School constipation is of this character, and is not unfrequently attended by typhlitis and circumscribed peritonitis. Females are proverbially prone to constipation with acid eructations. In more advanced schools, colleges and seminaries neglect of the bowels causes at least two-thirds of all illness. The most apparent sequence is a gradual poisoning of the system by retained excrementitious matters constituting a condition properly called stercoræmia. The subjects of such blood poisoning present a sallow anæmic appearance with a languor marked in every movement. But the consequences of school constipation, besides producing headache and lassitude, fall elsewhere with the female. The frequency of uterine displacements in virgins is recognized by gynecologists. We instinctively shrink from the treatment of such conditions, while there is every reason to believe they exist and that their existence is largely due to retention of urine and fæces beyond a reasonable limit. We live in a day of specialism, and the demand is for more. Eye doctors, nerve doctors, pile doc-

tors, and womb doctors, draw their patrons most largely from the schoolroom. Grandmothers peer curiously over their spectacles when informed that their granddaughters are subjects of diseases which only married women are supposed to have and seldom had in their day.

Eye Troubles.—The frequency of hypermetropia and astigmatism is not only noteworthy among pupils of our public schools, but also myopia, due to prolonged study. The statement that nine-tenths of all cases of myopia originate from the schoolroom is startling. This defect is practically unknown among the uneducated. It is in consequence of overstrain. The deformity once acquired is permanent and renders the subject unfit for many of the duties of life. Oculists, I believe, consider the disease progressive in character, originating in childhood, never after the age 20 years. Ribot says the number of short-sighted persons must necessarily increase in any nation devoted to intellectual pursuits. Germans are proverbially near-sighted. Dr. Loring, in a paper upon this subject, makes the statement that 62 per cent. of the public school pupils in Germany are short-sighted. A faulty construction of the windows in regard to the admission of light may cause a preponderance of such cases to obtain in a certain school. It is probable that this deformity may become inherited.

Consequences of Overstrain not the same in both Sexes.—So long as sexual differences remain unappreciated, girls participating in rude, boyish sports, school study and restriction may be considered to affect the sexes equally. This period of life, always too brief, is much shorter in cities than in the country—a circumstance largely due to that oft' forgotten but nevertheless potent educator, the "street school." The period of more active growth and development corresponds to the age at which the most arduous tasks are required of the mental faculties. The physical perfection of woman demands at this period plenty of exercise in the open air and free supply of blood to the pelvic viscera. Instead, however, the blood is used to supply the brain, and the generative organs suffer. The inexorable laws of society demand an early finish to the education at any cost. The latter is acceded to, and the consequence falls like a withering blight upon the tenderest buds of our hope and promise. There are few, if any, female schools where there is any relaxation of discipline or study on account of the occurrence of menstruation—and this despite the knowledge that mental application at this time results in hysteria, and often in mental aberration, or the complete arrest of the menstrual function. Here, indeed, is the axe laid at the root of the tree, and the foundation broad and deep for future invalidism and the work of the gynecologist. Another phase of this question is already attracting the attention of thinking

men in the medical profession; a question assuming National importance; it is the sterility of highly-educated women, who, when girls in their teens, have been subjected to the ordeal of collegiate examinations. It has also been observed that of those who conceive, the mortality in child-bearing is exceedingly high. We are rapidly losing our National identity. It has been estimated that the State of Massachusetts will soon become depopulated of American children, notwithstanding her 70,000 old maids. Dr. Moore, following the inductive reasoning of Herbert Spencer, makes the statement that "America must in future look to Europe for her mothers." Sociologists and biologists have shown that motherhood decreases with high intellectual cultivation.

Just here I am constrained to say something in regard to the fault in our educational system itself. Children are taught more and know less than in our grandfathers' days. Book knowledge is overestimated and practical reasoning undervalued—a fault which extends to our colleges and medical schools. A blind allegiance to the so-called authorities leads to effeminacy of thought and destroys individuality. The failure of our brightest collegiate graduates to obtain lucrative employment is certainly suggestive of a want of practical education. The constant struggle in the various school grades is to pass rather than to know, and, as Huxley puts it, "outraged nature takes her revenge," they do pass and they don't know. The credulity of many educated people, and the readiness with which they seize upon the most palpable frauds, is a sad comment upon our schools of philosophy. A few years ago it was spiritualism, then blue glass, and now Christian science. Think of a young mother and her infant perishing from causes which even a trained nurse or a midwife could have easily prevented. She was a woman of culture and died a martyr to Christian Science, a sect to which she and her husband belonged. Facts which have been recognized from the beginning of science are isolated and built into sects. How long will it be before we shall resort to songs and incantations for the restoration of the sick, as did the ancient Greeks?

Chorea (St. Vitus' Dance).—Chorea, with all its train of consequences upon the growing brain and nervous system, is among the diseases produced by overstrain in the school-room. A discussion of the relation between chorea and rheumatism would not be germane to the subject under consideration.¹ In a former paper I have attempted to show that the exhausted nutrition of growth, plus brain, work produces both, and also that the two diseases are controvertible, if not indeed identical. Here, as elsewhere, overstrain is not equal in consequences upon the sexes. Girls

are more prone to chorea. When my clinic for diseases of children was held in the fall and winter months, cases of chorea were only occasional luxuries for a lecture subject. Since, however, this clinic has been made to include the spring and summer months, there is rarely a lecture day without a new case of St. Vitus' dance. Nine cases typical of the disease were present at the dispensary in a single week; of these seven were girls and two boys. All were pupils in public schools and were bright and ambitious scholars, who shed tears when told that the treatment would include a complete cessation of school work. Besides these, I select from my notes of private practice a few cases to illustrate the cause.

L. G., a bright girl of 13, growing rapidly, attacked during Christmas week. The involuntary movements, at first unilateral, rapidly involved the whole body, causing her to fall. Studies in school were history, geography and spelling to memorize, reading with definitions, arithmetic mental, arithmetic practical, drawing, grammar, music and composition. Time of study in school-room, including recitations, five and one-half hours, necessitating three hours' hard study at home every night excepting Sunday. She was at the head of her class, and talked in her sleep of her studies.

A. H., æt. 17. Chorea severe, general, but more marked on left side. Hardly able to carry her books to and from school. Same grade in different school. To these, from the same school, could be added four others ranging from 12 to 16 years of age. Three of these developed cardiac lesion, one died of peri- and endocarditis, and while the subject of chorea developed polyarthritis.

The difference between voluntary and forced learning is the difference between mental strength and mental debility. All of these children will be intellectually as well as physically weakened by the nerve-storm through which they have passed. The difference between partaking of food when we have an appetite and crowding it into a stomach already satiated is dyspepsia. There is a mental as well as a physical dyspepsia, and these over-taught school-children are the victims. The power of concentration of thought is feeble in the child. "The child's will is the wind's will," says Longfellow—and we see in this a wise provision of nature, as beneficial to the growing brain as is motion to the limbs.

The physiological law is that any work in excess of the power of the system adds nothing whatever to the desired result. If a child's capacity to learn is exhausted in two hours, there will be no gain by studying five hours. It has been ascertained that the longest period of thought that can be concentrated upon a single proposition with advantage is fifteen minutes. The astonishing progress made by pupils in our night schools has been a matter of comment among teachers.

¹ "Acute Rheumatism of Childhood," Kentucky State Medical Society, 1879.

Can it be that the flickering gas or lamplight, and the depressing influence of night, are found conducive to learning? Certainly not. But the importance of a suitable admixture of physical labor is so great that even these serious objections are overcome. England has a system by which 100,000 children are able to get from two and a half to three hours' schooling in the twenty-four. This is known as the "half time law," and it has been found that such scholars compare favorably in attainment with those who attend the regular all day sessions.

Consumption Favored by School Discipline.—

There is no point better settled in pulmonary therapeutics than the necessity of development of the apices of the lungs. Whatever of truth, if any, shall be found to attach to Koch's microbes, the fact remains that consumption may be prevented by expansion of the top of the lungs, that this is always the favorite seat of tubercular deposits, and that, conversely, whatever tends to lessen the capacity of the apex tends to produce the disease.

The position of the growing child bending or stooping over a desk in school for six hours a day effectually prevents such development. Shoemakers, bookkeepers and tailors are found more than other trades in the consumptive ranks, and it is in the main due to this cause. The respiration becomes insensibly more and more shallow. In the child the shoulders are approximated more readily, and the lung actually folded in upon itself.

This matter of the expulsion of the residual air in the lungs is a too much neglected point in therapeutics. The introduction of vocal music in our common schools will result in great good. Dr. Rush declares that the German people are largely indebted for their exemption from pulmonary consumption to the strength and volume which their lungs acquire in the practice of vocal music. It would be well if, at the end of each study hour, classes were obliged to stand and sing while fresh air is being admitted to the room.

In conclusion, Mr. Chairman, let me say that the evils of the school-room are not primarily the fault of the teachers, who are always overworked and always underpaid. The fault is in the people and the needed reform must commence with the people. A complaint was made a few years ago that shoemakers were ruining women's feet by making high-heeled and contracted shoes, to which complaint the craft very aptly replied, "We would not make them so if they were not demanded." Let the public demand instruction in natural laws, mental and moral philosophy, and hygiene. Let the old Greek apothegm be hung at the entrance of our institutions of learning. Physiology and hygiene should be taught in all schools and all grades. At present, if at all studied, it is reserved for high schools and colleges, where it is usually finished in a few weeks. Cæsar said to the soothsayer, "What concerns our-

selves must be last," and the sentiment cost him his life. It has cost many lives since.

It is as important to know that bile ducts open into the intestines as it is to know that the Lena River flows into the Arctic Ocean. It is as important for a girl to know how long it takes beef-steak, pickles and slate pencils to digest in a stomach as it is to know how long it takes the light of one of the fixed stars to reach our planet. Let the course of study be made different for the sexes. Lectures in domestic economy might be substituted for political economy, so that when the *ultima thule* of their ambition shall be reached they may reign queen of the household and remain queen of hearts. How many physical and mental wrecks, which now lie at the very threshold of manhood and womanhood, might be prevented by proper instruction. Children are educated more on their way to and from the school-room than they are within its walls, and this kind of education usually sticks, because it is obtained from observation. The first evasive answer to the question of the origin of themselves is the first false step in the child's future career. His innocent questioning of natural laws is silenced with such an emphasis as to awaken a latent curiosity. Is it any wonder that he should take his question to the great street school, with its vulgar jest for an answer? And is it a wonder that he should regard his teacher in the alley as a superior oracle whom he will consult on future occasions when such questions arise? Let us have such a blending of the physical with the mental development that brain work will not tire. Then the school-house will be the promoter of health rather than disease. There is no reason why study should not strengthen the mind as well as that the steady blows of the blacksmith strengthen his arm, if properly conducted. Then, and then only, may we hope to see more of that exceptional attainment, a sound mind in a sound body.

DR. LINDSLEY, of Tennessee: I have listened attentively to this paper, and with much interest. Since 1855 I have been connected with the Board of Education of my State, and have visited school-rooms all over the United States, talking with the superintendents and professors. The subject of Professor Larrabee's paper is of paramount importance, relating as it does to the millions of children attending our schools. There are two important points which occur to me in connection with it: 1. Medical men must arouse public attention to the necessity for paid medical inspectors. 2. I would put no text-books of hygiene in the schools, because the masses do not get this education. The majority of children leave the schools before reaching the higher classes where this subject is taught. Hygiene should be impressed upon them by every feature of their environment.

DR. HIBBERD, of Indiana: I agree with Dr.

Lindsley in the utter impossibility of teaching children in primary schools enough physiology to be of utility. There are many who are grandfathers who do not know what it is absolutely necessary to teach. Teach youth to observe, and what things they should observe. The trustees of schools understand the necessity for air, light, etc., but they cannot get the money to provide them. Every school-house in the land should be situated so as to face the best direction of the compass, having air and light in abundance, but it will cost a great deal of money.

We must recognize that all children are not exactly alike in their capacity for receiving education; and the present methods are faulty in teaching all children on the same plan. Due regard must be paid to mental and physical variations, and sound minds and bodies cannot be had until this is recognized.

DR. HAMILTON, U. S. Marine Hospital Service: The question of eyesight in school-children is one of particular interest to me, and foreign journals have devoted a great deal of space to the consideration of this question during the past year. Dr. Larrabee referred to the majority of German children being myopic; I think this is due to the employment of the old black letter. German medical text-books are printed in Roman letters; but for political reasons the black letters are generally used. I certainly agree in the necessity for school inspectors; and the first thing they should do would be to examine the text-books, the paper of which is often inferior, and the printing but little better. Another feature demanding improvement is the sitting arrangement of a school-room. We all know the country school-room with its four rows of desks, and windows on either side of the room, which imperfectly light the middle rows of desks.

DR. VAUGHAN, of Michigan: While I agree with the paper, I do not believe that all defects in eyesight in school-children are attributable to the school-room. If you enter any family room at night, the father and mother will be found sitting on either side of a table on which the light is, and the children are allowed to sit anywhere. I believe more harm is done our young girls by sitting up late at night at parties and dances, than by all the alleged confinement in the school-room. Dr. Larrabee did not refer to the stairs, which are usually selected as one of the fertile sources of disease in young girls; but if you watch a woman go upstairs, she does it with her body bent forward and swinging from side to side, instead of going upstairs erect. I believe the German method of the climbing cure might be employed advantageously in some of these cases.

I am not prepared to state how it is in other States, but in Michigan most children are better situated at the school-house than at home. Farm houses, as a rule, are far from being good sanitary

types. I do not believe that any necessary money would be withheld to secure first-class schools. The ignorance of teachers on hygienic matters seems to me to be the primary evil.

DR. HIBBERD, of Indiana: I wish to complete an omission in my remarks. I believe with Dr. Vaughan that the fundamental education should be with the teacher. But the architect must also be remembered. This gentleman usually puts his efforts on the adornment of the exterior of the building, and the interior is suited to this. We cannot get architects to give sufficient attention to the interior of these buildings, because it is their aim to produce handsome work.

DR. LINDSLEY, of Tennessee: I should like to ask Dr. Vaughan if the State Board of Health of Michigan has not acted as inspector of schools; and if its creation has not permeated the school system with its influence?

DR. VAUGHAN: The plans for school buildings must be approved by the State Board of Health.

CATARACT EXTRACTIONS, WITH ONLY THE EYE OPERATED UPON CLOSED BY ADHESIVE STRIPS.

THE OTHER EYE LEFT OPEN FOR THE GUIDANCE OF THE
PATIENT.

Read in the Section on Ophthalmology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY JULIAN J. CHISOLM, M.D.,

PROFESSOR OF EYE AND EAR SURGERY IN THE UNIVERSITY OF
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EYE AND EAR CHARITY HOSPITAL OF BALTIMORE CITY.

At the last meeting of the American Medical Association, June, 1887, I read a paper on the advantages of the isinglass plasters as the only lid dressing after cataract extractions, and the keeping of patients in moderately lighted rooms instead of the dark ones. I also stated that for some weeks I had made bold to leave one eye open for the guidance of the patient during the entire after-treatment. That this method of after-treatment would add immensely to the comfort of the patient, was evident to all; the only question was as to its safety, for the great results to be finally secured. Since that time, another year has passed, and with the twelve months' experience added, much more confidence can be expressed in the advantages of the method, revolutionary as it seems.

In my "Hospital Cataract Case-Book," every case of cataract extraction is entered. With the pure and simple senile cataracts in healthy patients, are put those of traumatic or inflammatory origin with iritic, choroidal and glaucomatous complications; all appear. Heretofore, in making up my reports and in tabulating the amount of vision secured to patients, a cataract extraction that was in every way a perfect success, the after-treatment having been accompanied

by no inflammation whatever, leaving the patient with a clear cornea and good pupil, was counted a failure because of nerve atrophy or extensive central choroidal or retinal changes, now rendered clearly visible by ophthalmoscopic examination through a transparent vitreous. As in the percentage of no restoration to sight these cases unjustly appear as failures in the general summing up after cataract extractions. In the list which I now present I will put only those of uncomplicated cataracts, so that proper comparison may be made between the methods of light afterdressings and treatment in light rooms which I strongly recommend, and the heavy dressings and dark rooms which others use.

In this list, culled from my case-book for the year ending May 1, 1888, I find seventy-four cataract extractions, dressed by a single strip of adhesive plaster over the eye operated upon only, the other eye being left open. Of these eyes so simply dressed none were lost. There was not a single case of corneal sloughing. In every case the cornea was clear, and in only two cases were the pupils closed by iritic adhesions, rendering an iridectomy in the future needful for the restoration of vision. In all of these cases the biniodide of mercury solution was freely used as an antiseptic during all steps of the operation.

My successful cases are not all V. $\frac{2}{6}$. Many of my hospital patients are drawn from distant regions, poor parts of the Southern country, and have not the means to pay for a second visit to Baltimore to have the secondary operation performed for the removal of capsular thickenings. We all know that these capsulotomies must enter largely into advancing cataract patients to the higher degrees of vision. Most of my cases are farmers from the States of Virginia, North Carolina, and Maryland. If they can see to read ordinary print and attend to their farm duties it is all that they desire. The improvement is so immense upon the no seeing with matured cataract, that they are perfectly satisfied with the results as secured by a primary operation. In their anxiety to get home as soon as the eyes become strong enough to stand ordinary light, I cannot retain them over a fortnight under observation. At this stage of progress after cataract extraction, vision, as we all know, is by no means the best. I again state, that if my cases when I dismiss them, at the end of two weeks never to see the majority of them more, must be accepted on the status of V. $\frac{2}{6}$, I will contrast unfavorably with the operators in the largest cities, whose cases may frequently return to them for examination and after-treatment for many months, until time, secondary operations, the careful adjustment of lenses, with the correction of such astigmatism as remains after the operations, will put their eyes in the best condition to exhibit the high degrees of excellence which cataract operations will finally bring about.

The point which I desire to make, is this, in answer to the following question: Is the exposure of one eye, and the light dressing of the other eye by a piece of adhesive strap, after cataract extraction, conducive to inflammation? My experience answers very positively, that it does not. It matters not what our preconceived notions are. It is so easy to theorize as to the necessity of adjusting compresses for the support of the whole cornea, so that all parts will be equally pressed upon. That absolute rest of the eyes is required for the healing process to be perfected. That the movements of one eye will necessarily cause the closed one to move to like extent, and that this frictioning of the wounded cornea against the lid must bring on inflammation. These opinions may be very satisfactory to those who always close up both eyes, and put their patients to bed, where they are kept on their backs for days in the dark. But if they will adopt the method which I use of closing up one eye properly, with a piece of isinglass plaster, that eye is as absolutely safe against all jarring as if a cut finger were dressed in similar manner. By this method, which in no way can disturb the nice relations which the eye ball and lids have always sustained to each other, there is nothing to friction injuriously against, even when the eye does move in its relations with the exposed one.

If an ophthalmic surgeon in his hospital work will try the methods honestly in an equal number of simple senile cataracts, his personal experience will soon show him the advantage of this simple treatment. Let him take a number of cataracts, as they may come in from week to week for surgical treatment, each alternate one to be operated upon in his bed, with both eyes closed by compresses and bandages, and kept absolutely quiet in a dark room with all the restraints that are usually imposed. Again, let each alternate one be operated upon in front of a large window, upon a convenient operating table, then close the eye properly with a piece of isinglass plaster one and one-half inches long and one inch wide, see that it is so thoroughly adjusted that the lids are made into one piece as it were, for the perfect support of the divided cornea. Leave the canthi free from the covering to permit of the escape of secretions, and for the introduction of drops by capillary action, if they be needed, without disturbing the adhesive dressing. When the plaster is dry and the lids closed let him get off from the table and walk to his moderately lighted room, guided by the eye which has been left open. When there, let him follow his own inclination to lie on the bed or sit in a chair. He will undress himself at bedtime and dress himself in the morning, eating his regular meals, and enjoying the sight as well as the conversation with friends. Then remove the strap from the one, and the badge from the other simultaneously. If

the cases have been operated upon with equal care antiseptically, the operation being in all cases equally smooth, the surgeon will find himself at the end of two weeks with twenty cases of cataract extraction equally free from inflammatory complications, and that is all that the most anxious operator can wish for.

During the week of treatment, at the daily visits, the surgeon must have noted the cheerfulness of the patient who had one eye opened and who had enjoyed the pleasant companionship of friends, when contrasted with the gloomy doubts and the shaken faith of the blind-folded one, who could not help inquiring how long he must endure this darkness. We will say nothing of the lighted candle which was brought in by the nurse to keep the surgeon from colliding with the table or other bed-room furniture. Then contrast the condition of the eyes at the time the strap and the bandage are removed. The one in the lighted room looks at you and you at him, as you have done daily. You have seen the adhesive strap day by day free from secretions and retaining its adjustment. You now see the newly exposed eye singularly devoid of redness and of weeping. It stands the light wonderfully for one so long closed, because the one always opened has preserved the closed one from the acquired sensitiveness engendered by darkness. As the candle is brought for the inspection of the eye released from the dark bandage, the injection and weeping, incumbent on the exposure after the week of night, do not surprise us, for we are accustomed to see it in every case thus treated.

Follow the two classes of cases up to the end of the two weeks, to the day of dismissal. The one treated by the bandage has never been for a moment without the protection of dark smoked glasses, and cannot go for a moment without them. The one treated by the adhesive strap with one eye opened had never had the smoked glasses on, and has never felt the want of them. One cannot bear the light, the other is not aware of its presence, and only puts on smoked glasses as he goes out on the street because he is told to put them on.

In the March number of the *Archives of Ophthalmology*, 1888, Dr. Oliver Belt, my resident physician at the Presbyterian Eye and Ear Charity Hospital of Baltimore City, has published a paper written some months since, on the result of one hundred cases of cataract extraction treated by the isinglass plaster, in light rooms and without restraint. Some, the earlier cases, with the closure of both eyes, and the last half of the series with one eye alone closed. These were taken as they appear in the case-book of the hospital, and as he very properly says, some of them with glaucoma, nerve atrophy, and other fundus complications. In his table it is seen that eighty-three of the one hundred had good vision,

seven had improved sight; in five there was no improvement from causes, fundus troubles easily appreciable after the cataract was extracted, and five were failures. Among the five failures one was from purulent contagion, panophthalmitis, a misfortune or accident that would have occurred under any kind of after-treatment. The second was in an old feeble man of 91 years of age, who was willing to take the risk in his desire to see. The third patient left the hospital for her city home seeing well. In getting from the street car to her house door she was caught in a summer shower, and from wet clothing and exposure the eye took on inflammation and was lost. Most surgeons would have ignored this accident, as she was dismissed from the hospital with good sight. I counted it as a loss for final success. Two alone remain as inflammatory complications, belonging to the operation of cataract extraction, and the treatment, a loss of 2 per cent.

In the same volume of the *Archives of Ophthalmology*, for March, 1888, Dr. H. Knapp reports a series of cataract extractions without iridectomy. He states how carefully he has used antiseptic precautions, avoiding all unnecessary movements, as tending in his opinion to the displacement of the iris, and how he has bandaged with care both eyes. He contrasts his method of dressing with the simpler method. Thinks Chisolm has gone too far in simplifying the after-treatment of cataract extractions, and then compares the final results in his carefully selected series of simple senile cataract extractions with the table from Dr. Belt's report of my hospital work, in which complicated as well as simple cases are mingled together. He closes this part of his paper with this statement: "The superiority of Dr. Chisolm's bandage is not borne out by his statistics. Five per cent. of loss and 5 per cent of no vision, is below the average success of experienced and skilled operators to the front rank of whom we all know Dr. Chisolm belongs." This is an unfair contrast, the more especially as Dr. Belt has explained in his paper how these cases were failures in seeing, even when no inflammatory complications had arisen during the after-treatment of the cases; and how an ophthalmoscopic examination showed glaucoma, nerve atrophy, or central choroidal patches. If the operation of cataract extraction, even in these cases, had not been in every way successful how could the ophthalmoscopic investigation have been afterwards made. Sight was not restored, but that was not the consequence of an unsuccessful cataract extraction.

I here repeat what I had mentioned in the beginning of this paper, viz: that from May 1, 1887, to May 1, 1888, I had made seventy-four simple uncomplicated cataract extractions under the simple dressing of one eye closed with an adhesive strip, keeping the patient in a lighted room, and avoiding all restraint in his move-

ments and in his surroundings. Of these cases I have not lost a single eye. In only two did inflammatory closure of the pupil occur, which will require a secondary operation for the restoration of vision.

I have now had two years' experience in this simple dressing of eyes after cataract extraction. For the past year I have left one eye open in all cases. I have not used dark rooms. I have not operated on the patient in bed, but always in the operating room, before a large window, and upon a firm narrow table. In every case the patient has walked from the operating room to his chamber, guided by the eye left open when it possessed vision enough. In no case was the patient put to bed unless he desired it, and every freedom of movement was permitted. In no individual case have I seen any trouble that I had not met with before, when I was in the habit of using careful bandaging, dark rooms and all the restraints, which many still impose.

As to the final success of the operation, I have always thought that nine-tenths of the dangers were incurred during the operation. If the entire manual has been satisfactorily, or as we now say smoothly done, under antiseptic precautions, it makes but little difference how the case is afterwards dressed, success is most likely to crown the skillful operation.

I know that eyes get well under bandaging and bed confinement for I have individually had the experience in hundreds of cases. I know that eyes after careful cataract extractions will get well without inflammatory complications, under a light adhesive strap dressing of the eye operated upon only, the other being left open for the guidance of the patients. Whether the patient is put to bed and kept quiet or whether he is allowed to sit up and walk about, whether he is undressed or is allowed to dress himself, whether he is made to keep silence or is allowed to talk, whether he is kept in the dark or is permitted to enjoy the pleasure and comfort of daylight, whether he is surrounded by no restraints or is rigidly deprived of all liberty. In all of these diametrically hostile conditions of after-treatment of cataract cases, those carefully and judiciously operated upon will have sight restored and all in like ratio. Then let us show mercy and consideration for the comfort of those who must submit to our dictation, and put as few restraints as possible upon those we operate upon, the more especially as experience is beginning to show that these restraints count for nothing in the final good results to be secured.

DISINFECTION OF SPUTA.—There have been placed at the Lariboisière Hospital, an apparatus for the disinfection, by a new procedure of antiseptics, of spittoons used by tuberculous patients. It is to be applied to all the hospitals of the Seine.

TUBERCULAR LARYNGITIS.

Read in the Section on Laryngology at the Thirty-ninth Annual Meeting of the American Medical Association, May 9, 1888.

D. EMMETT WELSH, M.D.,
OF GRAND RAPIDS, MICH.

In point of frequency tubercular disease of the larynx ranks third among the organs so affected; namely—the lungs, intestines, and the larynx. The disputed question as to its primary involvement, or its being secondary to an already existing lung difficulty, has been practically settled; as recently investigated and recorded cases have shown almost conclusively that a primary involvement can take place. Into this dispute this paper will not enter, but will endeavor to show forms of catarrhal inflammation existing primarily as such, as important factors in its production.

There are certain forms of catarrhal inflammation as seen in this vicinity—Western Michigan—attended with an excessive secretion of mucus and, at times, muco-pus. The nose is almost constantly filled with this secretion and the naso-pharynx and pharynx constantly bathed with the same. This secretion is, with difficulty, removed; and the mucous membrane of the nose is at times very noticeably inflamed with points of erosions and tendencies to epistaxis. The pharynx presents this same appearance but with this addition, that it presents a relaxed or flabby condition. The larynx is also flabby, and instead of the pinkish tinge of color it presents a grayish hue. The serous and mucous glands in this condition constantly freeing themselves of their secretion; the mucus passing down the pharynx and lodging in the arytenoid commissure, develops an irritation and provokes coughing. This is further increased by hawking and an extension of the inflammatory action.

The subjects of this condition are generally persons of a strumous habit, or those suffering from repeated attacks of colds, coupled with an already existing impairment of health.

A current of inspired air passing over this kind of tissue, though elevated in temperature and changed from a condition of dryness to one of moisture, is as injurious to the general health as dust and cold laden air is to the finer bronchi.

The stomach is impaired by the commingling of the food and mucus, thus adding another source of injury to an already existing condition. The impairment of health is noticed by loss of appetite, emaciation, pallor, and slightly elevated temperature. You are generally consulted on account of an irritative cough devoid of free expectoration, when, on inspection and examination the above condition is noted, or there occurs later a partial anæmic condition of the palatine arches and the pharynx, and a grayish hue to the larynx, with infiltration of the sub-mucous tissue.

From repeated attacks of inflammatory action the mucous membrane becomes lowered in its

vitality; there is partial arrest of its function, as shown by the loss of endosmotic action of the Schneiderian mucous membrane, due to a lack of absorption of the water which is condensed on its surface and drips from the nostrils. Hence catarrhal inflammations readily follow in those of lowered vitality. Further, there is a loss of elasticity in the capillaries of the part, as seen by the stagnation and retention of blood in them producing congestion of the parts. This stagnation may be complete or isolated, and, serum now being poured out, swellings necessarily result.

Allowing a still higher impaired vitality the serum and mucus exuded will contain pus corpuscles. Pus is not irritating in character, yet under certain circumstances it is rendered ichorous and then it is poisonous and destructive to neighboring tissue. The poisonous part is capable of uniting with and destroying animal tissue, and when absorbed into the circulation destroys the vitality of its constituents, giving rise to abscess and sepsis. Its effects on mucous surfaces are ulceration, mortification, or some actual loss of tissue.

Bearing in mind how easily ulceration of mucous surfaces takes place, we cannot but be surprised at those cases which seeming of minor importance certainly involve solutions of continuity in situations very open to absorption. This ulcerative process taking place in those already debilitated, or particularly those of a strumous habit, renders an abnormal sensibility of certain tissues liable to injury, and is most marked in mucous membranes, and their inflammatory action is exceedingly protracted. When inflammatory action, occurring in healthy individuals, does not lead to or cause death of the part, its product is absorbed or leads to suppuration or the formation of vascular connective tissue. But in struma and those generally debilitated, absorption is retarded and its tendency is to infiltrate and accumulate in the tissue and so lead to caseous change.

Tubercle, in its simplest sense, refers to a most typical stage of a certain tissue change; and to the process which precedes its appearance, as well as that which follows, may the term tubercular be applied. Tubercle is found in the floor of scrofulous ulcers and in certain affections of the mucous membrane, but it is not met with in all. Yet it must be borne in mind that there are grades and degrees of the tubercular process, as well as there are in inflammation.

The tubercular formative action may proceed thus far and, like inflammatory action, not always form pus.

Reindfleisch considers scrofula the starting-point of the tubercle-producing process, and considers that the tubercle is usually derived by a process of infection from some near or distant seat of scrofulous disease, thus tracing the connection between certain eruptions of tubercle in the lung

and a preliminary scrofulous bronchitis. If tubercle appears in a gland, then it is due to a scrofulous catarrh of the mucous surface; or, taking another example, a tubercular ulcer may begin as a catarrh and, after a time, tubercles appear at its base. Scrofula is the soil, tubercle the seed, and their relation confirms the theory that it is especially upon the soil of scrofula that the infection can and does take root and develop. Bearing now in mind the condition above given of the tubercular and pretubercular stage, and the lowered and impaired vitality of the naso-pharynx, and the existing debility of the patient, the proneness with which the mucous membrane becomes inflamed and the secretions of this membrane to become ichorous, and remotely, the formation of pus, I cannot but infer that catarrhal inflammations of the upper respiratory tract enters and creates a formative factor in the production of laryngeal tuberculosis, or even the naso-pharynx. And, knowing that tuberculosis is a disease manifesting itself primarily in the respiratory region, and that many catarrhal inflammations of the lungs begin in the larynx, it is fair to infer that in those cases where the eye reveals what the ear fails to detect, that the larynx is primarily attacked. Pathologically considered, four stages exist: anæmia, tumefaction, ulceration, caries and necrosis. On inspection, the appearances of the above are remarkably noticeable, and certain appearances are almost pathognomonic. Voice failure is a very early symptom, and during conversation a change in the character of the voice is very noticeable. In the beginning is noted a gruff hoarseness, which soon changes to a high falsetto, and gradually passes to a toneless whisper. At times there is complete aphonia.

Impaired respiration in the earlier stages is not a noticeable feature, yet, during the latter stages, dyspnoea may ensue, the result of tumefaction and the mechanical loss of mobility and ulceration of the cords.

Difficulty in swallowing is not always present, but when so, it is undoubtedly the symptom which hastens the death of the patient. At first liquids are only refused, and when taken they pass backward into the naso-pharynx or, from the impediment afforded to the movement of the epiglottis, may pass into the larynx and cause suffocation. As soon as ulceration takes place the pain on deglutition is extreme; thus the patient's refusal of food and the unfavorable termination that soon follows.

Pain on speaking is prominent, and when severe is usually referred to the ear. Cough is a prominent and a very distressing symptom, and in the advanced stages the paroxysms are productive of severe pain and are followed by extreme prostration. At first the cough is an irritative one, as though there was some foreign substance in the throat. Expectoration is only glairy in

character until ulceration is established, when it is mucus and muco-pus.

Hæmorrhage from the larynx is rare, and when suspected it is with much hesitancy we say it originated from the larynx.

During the stage of tumefaction a prominent feature is noticed. There is a pyriform thickening of the membrane covering the arytenoid cartilages and the commissure. This thickening is characteristic. The shape of the cartilages is completely masked by this club-shaped swelling, and it may extend upward to near or above the level of the cartilages and fill up the space between them. Previous to ulceration there are small whitish-gray patches noticeable either on the arytenoids or ventricular bands, existing singly or in groups. They are of short duration and ulceration speedily follows. Ulceration developing their peculiar character is a worm-eaten appearance, showing that degeneration has commenced in the deeper tissues. The ulcers are small and isolated at first, but soon unite by breaking down the intervening tissue and forming large ulcerative surfaces.

The following cases presented themselves for examination :

E. W., æt. 21 years, occupation mechanic. Had suffered from nasal catarrh for several years and complained of a dry, hacking cough and frequent attacks of nasal hæmorrhage. The nostrils and naso-pharynx were constantly filled with a mucus when, on its removal, the mucous membrane of the nares was inflamed, and the naso-pharynx and the larynx were of a lustreless color and presented a relaxed and flabby appearance. On phonation the distinctive features of the cartilages of Wrisberg and Santorini were masked and the vocal cords inflamed. The voice was changed in character to a marked gruffness. There was impaired appetite, emaciation, slight elevation of temperature, and a constant irritative cough. On auscultation and percussion the lung revealed no difficulty, yet there was a strong history of scrofula.

The nares and throat were sprayed with an alkaline spray, using Dobell's solution every day, and following the same up by spraying the throat with *zinci. sulph.*, gr. ij to aq. 3j, on alternate days insufflation to the larynx of a finely triturated powder containing iodoform, tannin and bismuth sub. nit. Internally, *syr. ferri iodid.*, *syr. hypophosphites*, Fellows; and free outdoor exercise. A continuance of this treatment was carried out for three months, when the patient increased in weight, the cough and hæmorrhage had ceased, and I discharged the case as well.

My second case was similar to the first, with this addition, that on the arytenoids and ventricular bands there were isolated points of ulceration, and more marked constitutional trouble and partial aphonia.

The changes made in treatment were the omission of tannin by insufflation, using iodoform and bismuth in equal proportions. After four months' treatment this case improved and, seemingly, is well now, and six months have elapsed.

It is unnecessary to enter into details of the different forms of treatment, as each case presents its peculiar characteristics. I think many cases will improve, and particularly of those persons under 21 years of age. When local treatment has been very noticeably beneficial to the laryngeal difficulty, and there exist deposits in the lungs, a change of climate is need. Colorado or New Mexico are preferable. In the stage of ulceration little or nothing can be done, save to alleviate the distressing symptoms as they arise. Care should be taken not to fatigue the patient by local treatment, allaying the pains and difficulty of deglutition by first cleansing the parts with some alkaline solution and then spraying the throat with a solution of cocaine; after which applying morphia, iodoform, and acacia or bismuth, and endeavoring to render the patient's last hours as comfortable as possible.

BINOCULAR ASTIGMATISM.

Read in the Section on Ophthalmology at the Thirty-ninth Annual Meeting of the American Medical Association, at Cincinnati, May 7, 1888.

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I have not infrequently encountered cases of astigmatism in which, after having corrected the error in each eye separately, and on testing both eyes simultaneously, in binocular vision, have found that vision proximum was not perfect, and in order to attain normal vision near at hand, in binocular sight, the angle denoting the axis of the cylindrical glass must be changed in one or both eyes.

In correcting this binocular defect, types and the astigmatic bars were employed. If the patient looks upon the floor it will seem to incline to the right or left, and on changing the axis of one or both cylinders, the surface will appear level. But the same defect will be apparent if a board 12 x 3 inches, with parallel sides, be held in front of the patient at one metre, and on a level with the eyes.

In these cases then, the answer will be, that the right or left end of said "object-board" is wider than the other. The angle of one or both cylinders is changed until each end of the "object-board" seems equally wide, or in other words, the sides are parallel; and then it will be found that the astigmatic bars are seen normally in near or far vision, in binocular vision. All of my refraction cases are estimated, not only by the usual methods, but the test as given is applied to all cases of astigmatism before the investigation is regarded as complete.

The use of glasses thus adapted has been successful in practice, with one or two exceptions, and in these the use of cylinders had to be dispensed with and spherical glasses employed.

This defect in binocular vision does not occur, of course, in all cases of astigmatism; but observation has taught me that such errors are far from being uncommon.

The following explanation offered of binocular astigmatism, seems more rational than any other with which I am familiar:

If a perpendicular be raised anteriorly and horizontally midway between the eyes from a base line intersecting each *fovea centralis*; then, in testing each astigmatic eye separately, the *axis of vision* will, in *vision remotum*, be parallel to said perpendicular. If the ocular muscles are normally balanced in action, the plane which cuts the visual axis in the cornea will be vertical. In the normal eye, *its fellow being covered*, during vision proximum, *still* the visual axis may be parallel to our perpendicular, and hence the angle of the axis of the cylindrical glass may often be the same in remote and near vision, *when each eye is tested singly*. In binocular vision, when astigmatism is present, the distance is so great, in remote vision, that the visual axes are each parallel to our perpendicular and to each other, and when the ocular muscles are harmonious in action, types and astigmatic bars are seen in normal form. So will vision be perfect near at hand, in astigmatism, provided this due balance is maintained in these muscles; but it is evident that, in proximal vision, the interni inferior oblique and superior and inferior recti muscles must exercise increased force and act in concert.

If these muscles do this, there can be no binocular astigmatism (in the sense cited) which requires re-correction, after each eye has been separately corrected, and *in vision near at hand*. But if these muscles are not harmonious, then the plane of the rays of light remaining the same, that is, vertical, and the *axis of rotation* of the eye at its upper extremity, inclining to the right or left, then it follows that the relation of the axis of the cylinder and the astigmatic meridian of the cornea has been changed, and in order to restore this relation the axis of the cylinder must be made to correspond with the modified position of the defective corneal meridian.

Let the following case illustrate: In binocular and proximal vision, suppose the left inferior oblique fails to act sufficiently to maintain the axis of rotation vertical, and that the inner fibres of the left superior rectus inclines said axis, at its upper extremity, towards the nose; then the rays of light will no longer cut the cornea in its vertical meridian, but towards the temporal side of—the should-be—vertical plane of the cornea. If the defective axis of the cylinder was at an angle of 180° in vision remotum, for proximal vision

the axis of the glass will have to be turned upward towards the displaced axis of rotation of the eyeball, as many degrees as *this* axis has deviated from the normal vertical perpendicular. If to 10° , then the angle would be 10° instead of 180° for the cylinder, the scale running from the temporal side. In other words, the measure of the deviation of the axis of rotation is the number of degrees of axis-displacement of the cylinder required in order to cause both sides of our "object-board" to appear parallel.

By trial the proper degree is found and in which eye the correction should be made, or if both eyes should be corrected.

In remote vision, the ocular muscles may or may not be harmonious, but if these are normally balanced in action when accommodation is at rest, it is not difficult to comprehend when the muscles supplied by the filaments of the third nerve are active, as in vision proximum, that this relation may be modified, and the *axis of rotation* so changed as to demand a re-correction for near and binocular vision. This change of cylinders does not interfere with normal vision remotum.

As these changes in the axis of the cylinders are observed in remote vision when the eyes are under the full influence of mydriatics, it results that the modification in the axis of rotation cannot be due, at least directly, to accommodation. This may be illustrated by the following case:

Miss S. L., aged 28 years. When under du-boisea, she requires in the R. E. — $1.0 \text{ sp. } \bigcirc$ — $0.5 \text{ ax. } 130^\circ$, and in L. E. — $0.75 \bigcirc$ — $0.5 \text{ ax. } 40^\circ$, V. 2, = $\frac{1}{4}$, and the astigmatic bars appear normal. But in binocular vision, when the "object-board" is placed at one metre, the left end of said board seems wider; when the left cylinder is turned to 30° the sides of "object-board" are seen parallel, and the floor is level. When the effects of mydriatic had passed off, a week later, the cylinders at 30° and 130° induced seeming parallelism of the "object-board" and a level floor.

A few cases will be given illustrating the change of axis of cylindrical glasses in order to obtain normal and proximal binocular vision.

Case 1.—Miss A. V. C., aged 18 years. Under du-boisine she requires in R. E., — $0.5 \text{ ax. } 90^\circ$, V. = $\frac{1}{4}$; and in L. E., — $1.25 \text{ ax. } 45^\circ$, V. = $\frac{1}{4}$. At one metre the "object-board" is narrower at the left end and floor inclines to her left in binocular vision. On turning the left cylinder to 60° the floor appears level and the sides of the board parallel; and the distance types and astigmatic bars are now seen normal.

Case 2.—Miss M. C., aged 27 years. Without mydriatic her case reveals that she requires in R. E., + $4.5 \bigcirc$ + $1.25 \text{ ax. } 105^\circ$, V. = $\frac{1}{4}$ and $\frac{3}{8}$ D.; and in L. E., + $2.5 \bigcirc$ + $1.5 \text{ ax. } 120^\circ$, V. = $\frac{1}{4}$, and $\frac{1}{2} \frac{5}{8}$ D. V. 2, = $\frac{1}{2}$, and $\frac{1}{2} \frac{5}{8}$ D. The "object-board" sides are not parallel in binocular vision at one metre or the floor level, until the left cylin-

der-axis stands at 120° , which later does not correspond with the axis of the right eye, or 75° .

Case 3.—Miss A. H. B., aged 31. Without mydriatic, requires in R. E. $+0.5 \text{ C} + 25 \text{ ax. } 60^\circ$, V. $= \frac{1}{4}$ and $\frac{5}{16} \text{ D.}$; and in L. E. $+0.5 \text{ C} + 0.25 \text{ ax. } 100^\circ$ V. $= \frac{1}{4}$ and $\frac{5}{16}$. But binocular vision at one metre is not normal unless the axis of right cylinder is at 60° , in lieu of 80° , which latter would correspond with the axis of 100° in the left eye.

Case 4.—Miss J. R., aged 31. Under duboisine, she required in R. E. $+0.75 \text{ ax. } 50^\circ$, V. $= \frac{1}{4}$; and in L. E. $+0.75 \text{ ax. } 140^\circ$, V. $2 = \frac{1}{4}$. But binocular vision at one metre is not normal when the axis is at 130° left eye. A week later, when the effects of the mydriatic had passed off, binocular vision was perfect with the angles 140° and 50° in far and near vision.

Case 5.—Mr. J. G. S., aged 18 years. Under duboisine he requires in R. E. $+0.75 \text{ ax. } 40^\circ$, V. $= \frac{1}{4}$, and in L. E. $+0.75 \text{ ax. } 90^\circ$, V. $= \frac{1}{4} = \text{V. } 2$. After the effects of the mydriatic had passed off the axis of the right cylinder had to be turned to 90° in order to obviate binocular astigmatism at one metre, and then vision remotum was perfect.

Case 6.—Mr. J. N. S., aged 34 years, requires $+2.75 \text{ ax. } 75^\circ$, V. R. E. $= \frac{1}{4}$, and with $+3.5 \text{ ax. } 90^\circ$ V. L. E. $= \frac{1}{4}$; V. $2 = \frac{1}{4}$, and $\frac{5}{16}$. But the "object-board" was not seen parallel at one metre. On turning the left cylinder axis to 105° , binocular vision, near and far, became normal so far as glasses could accomplish, and these continued to serve him well.

Case 7.—Mr. F. G., aged 27 years, under duboisine requires R. E. $+1.25 \text{ ax. } 180^\circ$, V. $= \frac{1}{4}$, and in L. E. $+0.5 \text{ ax. } 180^\circ$, V. $= \frac{1}{4}$. But V. 2. while $= \frac{1}{4}$, reveals the sides of the "object-board" not parallel. On turning the axis of the right cylinder to 30° the "object-board" is seen normally and V. $2 = \frac{1}{4}$ and $\frac{5}{16} \text{ D.}$

Case 8.—Mr. L. I., aged 19 years, without duboisine the angle for each eye was 90° , but when under this mydriatic he required in R. E. $+3.5 \text{ ax. } 70^\circ$, V. $= \frac{1}{4}$, and the same cylinder in L. E. at 100° V. $= \frac{1}{4}$. The bars and types were seen normally, V. $2 = \frac{1}{4}$ and $\frac{5}{16}$. These glasses were given and failed to give proper vision. He was given $+3.5 \text{ ax. } 90^\circ$ for each eye, and binocular far and near vision became normal. He was not brought under mydriatic at the second application. It is certain that this patient under the mydriatics saw in binocular vision normally, but after accommodation was fully restored vision was abnormal in each eye with the first glasses, and to secure binocular far and near vision each cylinder was changed to 90° . This result may be due to the stimulus of accommodation exciting through the filaments of the third nerve, the superior recti in each eye. It is true that with the cylinders at 90° in each eye vision remotum of the bars and

types was normal. This can only be accounted for on the supposition that, *even in remote vision*, there must have been present accommodation. It is also true in this case that this ametropedeveloped $= \text{D. } 4.5$. Astigmatic hyperopia in each eye under duboisine, but accepted only a $+3.5$ cylinder when the effects of the mydriatic had passed off. He, therefore, was exercising $= +\text{D. } 1.0$ of accommodation for distant vision, and it is probable this would stimulate the superior recti sufficiently to change the axis of rotation in binocular remote vision to 90° each eye. This man's unaided near point was 19 cm. $= \text{D.}, 5.3$, and as he had $= 4.5 \text{ D.}$ of hyperopia, his accommodation was $= +4.5 + 5.3 = +9.8 \text{ D.}$, which is equal to what he should have had at 20 years of age. In correcting $+3.5$ of this astigmatism he would possess an excess of accommodation $= 9.8 - 3.5 = 6.3 \text{ D.}$, in proximal vision.

Case 9.—Miss M. C., aged 30 years. Without duboisine and with $-1.0 \text{ C} - 0.75 \text{ ax. } 25^\circ$, V. R. E. $= \frac{1}{4}$, and with $-1.25 \text{ C} - 0.75 \text{ ax. } 150^\circ$, V. L. E. $= \frac{1}{4}$, V. $2 = \frac{1}{4}$. In binocular vision at one metre the right cylinder gave only normal vision when the axis was turned to 180° or 0° , or horizontally. Then the floor was also level, the bars alike, and types seen normally in far and near vision. After the effects of the mydriatic had passed off these results held good.

Case 10.—Miss A. B., aged 23 years. Without mydriatic and with $-0.5 \text{ C} + 0.25 \text{ ax. } 180^\circ$, V. R. E. $= \frac{1}{4}$, and with $-1.75 \text{ C} - 1.75 \text{ ax. } 180^\circ$, V. L. E. $= \frac{1}{4}$ and V. $2 = \frac{1}{4}$ and $\frac{5}{16} \text{ D.}$ On using duboisine the formula became $-0.25 \text{ ax. } 145^\circ$, and V. R. E. $= \frac{1}{4}$ and $\frac{5}{16}$; and $-1.0 \text{ C} - 1.25 \text{ ax. } 180^\circ$, V. L. E. $= \frac{1}{4}$ and $\frac{5}{16}$, and V. $2 = \frac{1}{4}$ and $\frac{5}{16}$. Now the "object-board" sides were parallel, the floor level, and the bars normal; but the tests for binocular vision were not normal when the axis of the right cylinder was placed at 180° . These glasses held good subsequently.

It may be claimed that the foregoing results are due to our not having found the correct axis in the monocular tests of each eye. This assumption would be untenable, because every care was taken in correcting each eye singly, both in far and near vision; but on attempting binocular vision, especially at one metre, or less, distance from the ametropede, the sides of the "object-board" were not seen parallel, nor the floor level. When the axis of one or both cylinders were changed, then, and then only, binocular vision-tests became normal. But in these cases the axes of the cylinders did not correspond.

The explanation given may not be the true solution, and accommodation may have a direct influence in the result, by changing the form of individual sectors of the crystalline lens, but the fact remains that there is such a phenomenon as *binocular astigmatism*.

If, in calling your attention to this subject, I

shall induce any to investigate it, and possibly determine the true solution, I shall rest content with the result.

Zanesville, O., May 7, 1888.

THE FORCIBLE AND IMMEDIATE REDUCTION OF OLD SUBLUXATION OF THE TIBIA.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY E. H. BRADFORD, M.D.,
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The subluxation of the tibia in chronic disease of the knee-joint is so common a deformity that no description of it is needed. It is well understood that it is caused by the reflex spasmodic contraction of the hamstring muscles pulling the tibia backward in a joint whose ligaments and capsule have been relaxed by disease. This relaxation is not often to be demonstrated clinically, as motion of the sort causes pain usually—occasionally, however, cases will be met where the inflammatory process is so subacute that the tibia can be pushed forward and back without pain, owing to the relaxed condition of the posterior capsule and the crucial ligaments. This painless condition is of course not so uncommon in the knee-joint affections occurring in tabes (spinal arthropathies, Charcot's disease).

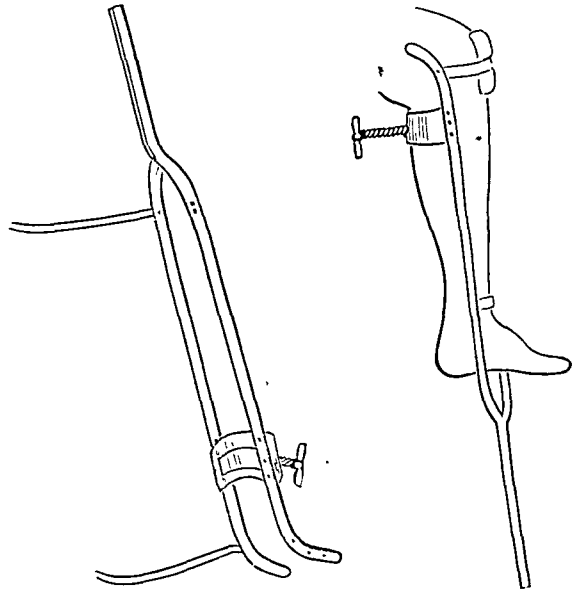
In cases of severe tubercular osteitis, when a spontaneous recovery has taken place, with fibrous ankylosis and subluxation of the tibia, it will be found in the severest cases that the cicatricial contraction of the capsule is so firm that, on attempting to forcibly straighten the limb, the head of the tibia cannot be made to slide forward as it should, but is held back in its position of subluxation not only by the hamstring tendons, but largely by the posterior wall of the contracted capsule of the joint. If the limb is pulled straight the tibia remains subluxated. In the lighter cases the head of the tibia can be pushed or pulled forwards manually, either with or without the help of tenotomy of the hamstrings, or by means of a mechanical appliance the subluxation can gradually be corrected. In the severest cases, however, this cannot be accomplished—or only accomplished after the prolonged employment of considerable and painful force.

A moment's reflection is sufficient to show that raising the lower part of the tibia, if the latter is subluxated at the knee, will not correct the deformity; neither will a simple pull upon the leg, separating the tibia from the femur, unless there is also a pressure upon the head of the femur forward. This latter is impossible while the posterior ligament is so strong as to resist such forward pressure.

In order to determine the practicability of

stretching the resisting ligaments in a normal knee-joint, experiments were made through the kindness of Prof. Dwight, of the Harvard Medical School, using on a cadaver the appliance to be described, and it was found that the tibia could be pushed forward (*i. e.* subluxated forwards) fully an inch. The first resistance encountered is the posterior crucial ligament, which becomes torn after the application of considerable force. The posterior ligament can be stretched and affords but little resistance in a normal joint.

In the distortion following chronic disease of the knee-joint with flexion at the knee and the head of the tibia subluxated, no resistance to correction will be found from the crucial ligaments which are absorbed in the morbid process, but the posterior ligaments and the posterior wall will, in cases of long standing, be found extremely firm. In such cases, before the limb can be made straight and the subluxation corrected, the contracted posterior ligaments and capsule must be stretched, enabling the tibia to slide over the condyles of the femur as in normal extension at the knee-joint. This can be accomplished in the following way: The patient being under the influence of an anæsthetic, the knee should be forcibly flexed in order to break up the intra-articular adhesion. The apparatus indicated in the accompanying diagram is then applied to the limb and pressure



from behind forwards, by means of the screw force, brought to bear upon the head of the tibia, counter-pressure being exerted on the ends of the condyles and the lower end of the tibia. The vessels and nerves lying deep in the popliteal space being well protected by the bellies of thick muscles, are in no danger of injury by such pressure, and the skin, as has been abundantly proved by osteocla-

sis, is capable of bearing without injury a great amount of momentary pressure. When the head of the tibia has been pushed forward to an extent the limb may be extended, and if it is found that some subluxation still remains, the procedure should be repeated or continued until entire correction is accomplished. After this is effected the limb should be held straight and secured against recontraction by a plaster of Paris bandage applied high up in the thigh and including the whole leg and foot. The patella and joint should be well protected by cotton before the application of the bandage. Or, instead of a gypsum bandage, an appliance of the principle of a Thomas knee splint may be used.

There is considerable pain for a day following the operation, but beyond that but little inconvenience; the patient should be able to go about using crutches in a few weeks. The plaster bandage should be worn a month or so, and for some time subsequent some form of retention appliance to prevent recontraction.

The procedure is only indicated in a limited class of resistant cases, and is manifestly contra-indicated in acute cases. The writer has found it of service in the two following cases:

Case 1.—M. H., æt. 22. Caries of the knee-joint at the age of 4. Has never been able to walk since that time without the use of crutches or cane. Complete recovery took place, except that a marked amount of deformity was left. The patient was unable to place the heel to the ground and could bear but little weight upon the toe, the leg being flexed at an angle of 130° with the femur. Marked subluxation of the femur was present. The joint was perfectly stiff.

Forcible correction was applied in the way described, and the limb fixed with a plaster bandage for two months. Crutches were discontinued at the end of six months, and at the present time the patient can stand upon the whole foot; the subluxation has been entirely corrected. Flexion of but a few degrees exists (10°), and the patient is able to walk without a cane, though using one by preference.

Case 2 resembles Case 1, except that the patient is a boy of 12 and the deformity has persisted not more than four years. Correction was made as in Case 1, and with a satisfactory result.

DR. PANCOAST, of Philadelphia, thought the method proposed by the essayist an admirable one for replacement of the tibia in the form of displacement under consideration; for, unless we adopt this or some other means of pressing the tibia to the front and retaining it in that position, our efforts will be a failure. We do not have the posterior ligament much interfered with; but the great danger is not only to the blood-vessels, but also to the nerves. I know of cases where the nerves have been injured; where the hamstring

tendons have been ruptured; where the arteries have been injured, and where gangrene supervened. Now, if we think that by forcing the foot forward we stretch the posterior ligament, we make a great mistake. That ligament is going to resist stretching as long as possible. Ligaments are made, not for stretching, but for the purpose of allowing motion of the joint without yielding. If you pull upon a man's arm with as much force as you can summon you will see that there is no stretching of the ligaments. They are made for inelasticity. If there is yielding of ligaments, it is because the ligaments are in a pathological condition. It must be after they have been pathological for a long time. In cases of "white swelling," synovitis of the knee-joint, the white fibrous tissue undergoes a change; it does not undergo a sudden change and it does not stretch, but during the time that it is undergoing the process of which I have spoken, it is absorbing moisture, and thus enlarges slowly, by capillary enlargement. Every one of us knows that it is a very slow process. So it is in cases of any joint. I have a case now under my care in which I am at a loss to know whether to use *brisement* force or not, or whether it would be better to reduce it by gradual pressure. It is difficult to say, too, whether cutting down upon the joint and removing a V-shaped piece of bone, and then restoring the position of the limb, is not the best procedure in most of these cases.

DR. D. McLEAN, CHAIRMAN: I am glad that Dr. Pancoast did not allow this interesting paper to go by default. We recognize certain of these cases of subluxation which we can rectify; but to think that we can do so in old cases of long standing is, I think, too much. In those cases the structures about the joint undergo too much change, and I do not think that it is safe or rational to think that we can do much in these cases. It will take the reports of more than two cases to lead us to endorse the procedure under consideration. I am inclined to adopt what Dr. Pancoast says with reference to exsection, that it is questionable if it is not the best procedure in many of these cases.

EXOPHTHALMIC GOITRE AND ITS TREATMENT BY TINCTURE OF STROPHANTHUS.

*Read before the Mississippi Valley Medical Society, at St. Louis, Mo.,
September 25, 1888.*

BY DANIEL R. BROWER, M.D.,

PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM IN THE WOMAN'S
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In this paper I desire to invite your attention anew to the more prominent features in the clinical history and diagnosis of exophthalmic goitre, and suggest its treatment by strophanthus.

The eyes, the thyroid gland, and the circulatory system are usually all perverted by the morbid process in this disease. The order of their sequence varies, but usually the circulatory disorders are first manifested. These consist of increased frequency of the pulse, palpitation, and dilatation of the arteries. The pulse in a mild case is about 100, but it may reach such a point in frequency as is impossible to count. The frequency varies with the emotional condition. Indeed, the impression made by the heart's action is one of intense nervous excitement in the cases generally. In the early stages the heart sounds are normal, but anæmic murmurs may soon be found, and later along, organic murmurs—organic murmurs that have resulted from the dilatation of the heart. This dilatation is a condition invariably present in chronic cases. The arteries are dilated and show increased pulsation, due in part to the increased force of the heart's action, but more especially to the lowered tonus of the vessels. Pulsation is especially manifest in the carotids, thyroid arteries, and the abdominal aorta. The goitre, ordinarily, does not show itself until some time after the cardiac symptoms. It is a soft, elastic, and painless enlargement, usually symmetrical, but often the right side is more enlarged than the left. The enlargement is seldom great, and it undergoes frequent changes in size from emotional disturbances, and may be absent altogether. There can usually be detected a loud blowing murmur, and sometimes distinct pulsation in the gland itself. They are very rarely present in the ordinary bronchocele, hence are of value in differential diagnosis.

The exophthalmos usually appears soon after the swelling of the thyroid, but occasionally before it, and still more rarely may precede it and the cardiac symptoms. In some cases it is absent altogether. The degree of exophthalmos varies from a slight prominence to such an excessive protrusion that no part of the globe is covered by lids. It is usually bilateral, but not always symmetrical; it often appears earlier in one eye than in the other, and the prominence of the one may exceed that of the other.

The ophthalmoscope will show pulsation in the arteries of the retina, when this pulsation can scarcely be detected elsewhere; hence this method of examination is a valuable aid to diagnosis.

Von Graefe first called attention to another useful diagnostic sign about the eyes, and that is a want of harmony between the movements of the eyeball and the upper lid. If you direct the patient to cast the eye downwards it will be found that the upper lid does not follow the movement of the eye at all, or if it does, then abnormally.

The temperature of the body is usually elevated from $.5^{\circ}$ to 1° Fahr. A muscular tremor, sometimes coarse and jerky like chorea, and sometimes fine and regular like paralysis-agitans, is

present in almost every case. It is confined in great part to the larger muscles. The head, fingers, and toes are usually exempt from this tremor. All the organs of the body sympathize more or less with the ordinary complexus of symptoms.

The gastro-intestinal area often shows loss of appetite, impaired digestion, nausea, vomiting and diarrhoea, and as a result there is marked emaciation.

The nutrition of the brain suffers much and is manifest in insomnia, headache, dizziness, weakness of thought and memory, irritability of temper, neuralgia; and this disordered nutrition not rarely leads up to insanity.

The respiratory system shows disorder in cough, oppression in breathing, and intercostal neuralgia.

The diagnosis of exophthalmic goitre, when the three classical symptoms are present, is easy, but in cases where the exophthalmos is absent, and where both goitre and exophthalmos are scarcely perceptible, there will be found great difficulty. In these cases the ophthalmoscope, as above mentioned, is a valuable aid; and the milliampère metre will also give valuable information, as first suggested by Dr. Vigorius, by determining the condition of the electrical resistance, which in this disease is markedly diminished.

The morbid anatomy and pathology is no nearer solution than it was in 1825, when Páry first described its symptoms. The various theories that have been proposed have been summarized in an excellent article by Dr. A. A. Eshner.¹ He reaches a conclusion that seems to be the most reasonable: That the symptoms are due to a disorder, functional in character, in the medulla oblongata, involving the cardio-inhibitory centre, the vaso-motor centre, the respiratory centre, and the other important centres located in that part. A careful consideration of the physiological functions of these centres will enable us to work out without much difficulty the pathogenesis of the disease.

The prognosis should be guarded. The disease may not only terminate fatally, according to von Graefe, in about 12 per centum of the cases, but not infrequently terminates in insanity. A great majority of the cases will certainly, if recognized early, yield to treatment. Early diagnosis is exceedingly important, for when structural changes have taken place in the heart and thyroid, the prognosis is unfavorable.

The treatment of this disease has been very unsatisfactory. The drugs in ordinary use have but little influence upon it; but I think we have found in strophanthus a remedy that in some cases is certainly of great value. I have administered the tincture of strophanthus in three cases with benefit. In the first case, a man 21 years old, who had been under the ordinary treatment

¹ "The Polyclinic," Philadelphia, July, 1888.

—tonics, alteratives, rest, electricity, for three months without any abatement of symptoms—indeed, with a steady progression of the disease, I commenced the use of tincture of strophanthus, 2-drop doses every six hours. The pulse at this time was so rapid that I could not count it. The dose was gradually increased, and when 10 drops were given the circulation was under control; pulse, when quiet, was 85 per minute. The exophthalmos and goitre gradually disappeared, and in about four weeks he was well. The strophanthus was gradually withdrawn and tonics substituted. This result was reached about eighteen months ago, and the patient continues well.

The second case was a female, aged 52, in whom the disease had continued about eighteen months. The strophanthus was given to her in about the same manner and about the same dose was necessary. An equally good result was obtained.

The third case has been under observation about ten days only, but the same influence is manifest as in the other two cases.

Dr. Norman Bridge, of Chicago, has administered the drug in two cases at my suggestion. In one case no effect was observed; in the other case he combined tonics with the strophanthus, and the patient made a rapid recovery.

Dr. E. Fletcher Ingals, of Chicago, tells me that he has administered it in one case, pushing the dose to ten minims, three times a day, with benefit. In his case, he was using at the time he began the strophanthus hypodermic injections of carbolic acid, but he attributes the improvement in the case principally to the strophanthus.

I do not advise reliance solely upon strophanthus, but ordinary hygienic rules must be observed, such as the avoidance of fatigue, physical and mental excesses, a careful, regulated diet, attention to bowels and skin. I also advise the use of ordinary tonics, and the application of galvanic electricity to the cervical sympathetic nerves.

I also desire to call the Society's attention to the seeming value of strophanthus in other diseases that sometimes, at least, have their origin in disordered nutrition of the medulla, such as epilepsy, megrim, and, through its influence upon the medulla, as an agent in controlling maniacal excitement, such as acute delirious mania. I feel confident that it will materially assist in relieving the febrile state, as well as in protecting the heart against the depressing influences of the ordinary remedies used for this purpose.

THE BILLINGS MURDER TRIAL. A MEDICO-LEGAL QUESTION.

BY D. M. WICK, M.D.,
OF NEW HARTFORD, IOWA.

On the evening of the 21st of last December W. S. Kingsley, a young lawyer of Waverly,

Iowa, was found dying on the floor of his office with a bullet hole in his head. His left hand clinched tightly certain papers, while his right hand lay open, a few inches from right thigh, and a revolver, with two empty chambers, was found under right leg. A post-mortem examination was made. The ball (32) entered the skull at a point between the root of right nasal bone and eyebrow, passing to the right of the crista galli, through right brain, circle of Willis, rupturing vessels, and lodged a half inch within left brain. Length of wound, five to six inches. The ventricles and cavities were filled with clotted blood. Death occurred within ten minutes. M. E. Billings was arraigned as the murderer.

The State attempted to prove that a bullet wound in the brain, causing instantaneous rigor mortis of the left hand, would also cause the same condition in the right hand, providing the revolver was held in this hand at the time the ball was fired. In support of this, the doctors making the post-mortem were put upon the stand. Counsel, in pleas, also read from Wharton & Stillé's Medical Jurisprudence, Sec. 722, Vol. 2, 4th edition. The defense read numerous citations from various medical works, to show that the brain has certain motor tracts controlling the actions of certain muscles; that by vivisection, a portion of the brain of a living animal may be removed and certain results follow; this wing, or that leg, or that set of muscles are affected.

Medico-legally, the above is a nice question to decide. Evidently, both the State and defense attempted to solve this problem by considering rigor mortis produced through the agency of the nervous system, either from injury to the nerve centres or from blood-clots in the ventricles.

Tidy quotes Beclard and Hermann, stating rigor mortis is altogether independent of the nervous system, and further states that the nerve supplying the muscle, or indeed the removal of the entire brain and spinal cord during or before its occurrence, in no way affects it. Because the dying man was found with the left hand firmly grasping papers, while the right hand was open and near the revolver, is there any evidence, in a medico-legal view, that he fired the fatal shot himself and then let go the weapon? or was it placed under the right leg by his murderer?

OVERWORK ON RAILWAYS.—It is stated that the Board of Trade of England have ordered the principal railway companies to supply them with returns showing every occasion during two typical months this year and last on which any man concerned with the working of the traffic was on duty for more than twelve hours continuously. It is believed that the Government contemplate the introduction of a measure dealing with the subject.

MEDICAL PROGRESS.

ANEURISMS AND TUBERCLE-BACILLUS.—In a paper read before the Académie de Médecine, M. GERMAIN SÉE said that he had been struck by the fact, especially since the discovery of the tubercle-bacillus, that patients suffering from aneurism of the aorta often become tubercular, and die of pulmonary phthisis, attended with the formation of cavities, and progressing slowly without fever. This was observed by Stokes, and numerous cases can be found in the records of Pathological Societies. Out of 24 cases of aneurism under his own care, 7 were thus affected with pulmonary tuberculosis. It is now well-known that patients with cardiac affections are not exempt from phthisis. C. Paul has shown the frequent occurrence of phthisis in cases of narrowing of the pulmonary artery. Aortic aneurism must now be considered one of the agents favoring the development of the tubercle-bacillus. In aneurism, from the disturbance of the circulation there is a stagnation of the venous blood, and diminished activity of the gaseous exchanges between the gases of the blood and those of the atmosphere. In this internal gaseous medium (in the alveoli of the lungs and smallest air-passages) the bacillus appears to multiply when it enters the body by the respiratory tract. In aneurism the air is imperfectly renewed in the whole of the lungs, just as in normal conditions it is imperfectly renewed in the apices as compared with the rest of the lungs. In short, excess of oxygen hinders, deficiency favors the development of the bacillus. In this way the multiplication of the bacillus is accounted for; the way in which it penetrates into the pulmonary parenchyma in patients of all ages who are affected with aortic aneurism, remains to be shown.

Lately it has been found that ulcerative endocarditis, or even simple endocarditis, with vegetations is caused by a staphylo-coccus; rarely by a strepto-coccus; more rarely still by the tubercle-bacillus. The analogies between endocarditis and endarteritis allow us to suppose the existence of an endarteritis, due to the presence of a microbe. Are the lesions that affect the internal and middle coats of an artery which has undergone aneurismal dilatation caused by a bacillus? If this question is answered in the affirmative, one can easily explain how the bacillus is washed away from its position in the aneurismal wall to the lung and there multiplies.

In the treatment of aneurism M. Sée relies on iodide of potassium, the mode of action of which he explains as follows:

1. It relieves the dyspnoea due to catarrhal affections of the bronchial tubes by liquefying the effused secretions.

2. It aids the intra-pulmonary circulation, and diminishes venous stagnation.

3. The volume of the aneurismal tumor is diminished by contraction of the adventitious coat and the tissues surrounding it.

4. By reducing the size of the tumor, the pressure on the adjacent nerves is relieved, and pain therefore mitigated.

He gives the iodide in the amount of 30 grains daily, divided into three doses, to be taken at the beginning of a meal.

For the relief of pain he has found subcutaneous injections of antipyrin most efficient. When a cardio-vascular tonic is required he has obtained good results from sulphate of sparteine, and rejects altogether caffeine and digitalis.—*Bulletin de l'Académie de Médecine*, Aug. 14, 1888.

GLYCERINE AS A SURGICAL DRESSING.—MR. CHARLES E. S. FLEMMING says: We want a dressing that is non-irritating, antiseptic, will not become adherent, will allow free drainage, will not allow the discharges to get hard and caked, will be freely miscible with the discharges, and not evaporate at any temperature of the body nor occupy the place intended for the discharges. We have, I think, what we want in the glycerine of starch of the Pharmacopœia, with some antiseptic dissolved in it; for example, corrosive sublimate 1 in 1,000 parts. The starch, added for convenience of applying the glycerine, in addition forms a non-irritating surface to apply to the wound and is a mechanical protection; it is most conveniently applied thickly spread on one or more layers of Gamgee tissue or some absorbent wool. This application is not irritating, is antiseptic, and is removed with the greatest ease from any wounded surface. As glycerine is freely miscible with the discharges it is quite absorbent, discharge in passing into and through the dressing becomes mixed with the glycerine, and as this does not evaporate it is thus prevented from becoming caked or hard and dry. The glycerine, itself hygroscopic, does not usurp the place of the discharge nor prevent the free escape of the watery vapors. Such a dressing after several days will be found moist, soft, flexible, and easily removed; it is heavy with the quantity of fluid it contains, a proof of its absorptive powers. The discharges are not collected in one spot. Next the wound there is a jelly-like layer which is easily removed, having a clean surface, and the sutures, if any, distinct and easily taken out, not being caked with blood.

In my own practice I have found healing of incised wounds under this dressing quick and accurate, and the dressing of lacerated and contused wounds is absolutely painless and very quick; I have found it of much benefit in those chronic granulating wounds which every dressing seems to irritate, and have applied it with success as a

daily dressing in two cases of purulent conjunctivitis. I have not had an opportunity of trying, but should think glycerine and starch might be used with advantage in skin grafting.—*British Medical Journal*, Sept. 22, 1888.

CONNECTION BETWEEN ALBUMINURIA AND DISEASE OF THE PLACENTA (*Schmidt's Jahrb. d. Mediz.*)—Fehling has recently drawn attention to connection between nephritis and disease of the placenta, relative to death of the foetus, and further investigations since then have confirmed his (Fehling's) views. Wiedow refers to a series of old published cases which, without having been properly explained then, speak for the relation of both diseases; Simpson, of Edinburg, regarded already early in the year 1860 albuminuria as the cause of disease of the placenta. Lately cases of this kind have also been described by Cohn, to which are added in Wiedow's treatise further observations from the "Freiburg Clinic." Mostly eclampsia intra or post partum, morbid kidney of pregnancy, were in question; once the necropsy revealed contracted kidneys; dead or extremely insufficiently nourished children and with it regularly anatomical changes of the placenta were found. Microscopically these appeared as numerous yellowish-white nodes, belonging either to the maternal portion of the placenta, or being found on the surface. Microscopically, according to Wiedow's researches, they represented the result of a coagulation and necrosis of the follicular epithelium. That there exists a connection between albuminuria and disease of the placenta is scarcely to be doubted; but difficult to answer is the question whether the change in the placenta is the consequence or cause of the albuminuria. For some cases the former view will hold good, but not for all. Sometimes normal placenta are found in spite of nephritis, sometimes the death of the child has already occurred before irritation of the kidneys presents itself, or the changes in the placenta are of an earlier date than the albuminuria. Finally it is unexplainable that, in cases of twins, one placenta is found diseased and the other normal. The proper final explanation raises still great difficulties and must be reserved for further investigations.—*American Journal of Obstetrics*, October, 1888.

PICROADONIDIN, THE ACTIVE PRINCIPLE OF ADONIS VERNALIS.—PROF. PODVYSOTSKI, of Kazan, publishes in the *Meditinskoe Obozrénie* some researches upon the active principle existing in *Adonis vernalis*. He finds by chemical analyses of the entire plant there is an amorphous substance of the nature of a glucoside (picroadonidin) which is the active principle, but that together with this there are present an orange-yellow substance (adonido-quercitin), a sugar (adonido-dulcitur), which crystalizes in beautiful prisms, a physio-

logically inactive glucoside, and an acid already pretty well known, and existing in *aconitum napellus* and some species of *equisetum*, and therefore called aconitic or equisetetic acid, $C_6H_5O_6$. Hitherto all attempts to isolate the active principle of *Adonis vernalis* have resulted in mixtures of the several substances named in various preparations, so it is not surprising that the so-called adonidins of different observers presented very dissimilar properties. Picroadonidin has an extremely bitter taste. It is easily soluble in water and alcohol, and slightly so in chloroform. It possesses all the physiological properties of the plant itself in a very high degree.—*Lancet*, October 13, 1888.

USE OF ANTIPYRIN IN THE NASAL PASSAGES.—DR. F. WHITEHILL HINKEL, of Buffalo, draws the following conclusions from clinical experience:

1. A solution of antipyrin possesses hæmostatic properties when sprayed into the nose, though not superior to cocaine.
2. Antipyrin in about 4 per cent. solution may be used upon the nasal mucous membrane with temporary relief to occlusion from engorgement of the turbinates, and with sedative effects upon irritable states.
3. It is most effective where the element of irritation exceeds that of inflammation.
4. It presents an advantage over cocaine in not producing local numbness and dryness, and in the absence of the general stimulating properties of cocaine, causing sleeplessness, headache, etc. In cases such as hay-fever, where an agent of relief is used for long periods, antipyrin as a nasal spray is less likely than cocaine to produce constitutional disturbance or to lead to a "habit."
5. Antipyrin presents the disadvantage of causing more or less severe smarting, and of being unequal to the relief of severe inflammation or extreme occlusion of the nares.
6. Its antiseptic and stimulant properties will probably make it serviceable as an application to fresh wounds and to granulations and ulcerations in the nasal chambers.
7. Combined with cocaine, it increases the local action of the latter, enabling it to be used in weaker solution.—*N. Y. Med. Journ.*, Oct. 20, '88.

INJECTIONS OF WARM WATER IN EPITHELIOMA OF THE CERVIX.—DE TORNERY draws the following conclusions:

1. Injections of warm water at 102.2° to 104° F., for about half an hour, twice a day, morning and evening, disinfect the vagina, cleanse it, and considerably diminish the ichorous discharge.
2. These injections diminish the loss of blood, and improve the general health.
3. In the majority of cases the pains are diminished, so that there is less need of injections of morphine.—*France Médicale*, No. 86, 1888.

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SATURDAY, NOVEMBER 3, 1888.

"HOW FAR CAN LEGISLATION AID IN MAINTAINING A PROPER STANDARD OF MEDICAL EDUCATION?"

Such is the title of a paper read before the American Social Science Association, at the annual meeting held at Saratoga on September 5, by Mr. W. A. PURRINGTON, Counsel of the Medical Society of the County of New York. This paper, says the author, "is a statement of what I conceive to be general principles and fair inferences from an experience of some years, as counsel of the medical societies of the State and County of New York, in drafting and securing the enactment of the present by no means perfect medical statute of the State, and enforcing in the County of New York obedience to its provisions."

At the beginning of last summer Mr. Purrington sent out a number of circular letters of inquiry upon the general topic of medical legislation; "almost every reply to the circulars expressed approval of some system of regulating by statute the practice of medicine; and the opinion was also strongly expressed that such legislation as had been already, crude and imperfect though it is, has perceptibly improved the standard of medical education."

At the beginning of his paper the author lays down certain postulates. In the first place, he says, such legislation as he was about to consider was considered by the courts as both constitutional and highly desirable. In the second place, the principle, and the only principle upon which such legislation can be justified is *salus populi*,—the

principle of security, of self-protection against fraud and ignorance. It is not the principle of protection for the medical profession that justifies such legislation, but protection of the public. Mr. Purrington goes on to speak of the evils of charlatanry, and then of the legal remedies against the immoralities of quackery, and of the existing statutes that recognize the diploma as conferring the right to practice. "While it may be perfectly true," he says, "that the probabilities are greatly in favor of a beneficial result from these laws in limiting the number of uneducated practitioners of physic, it is also quite as true that a fictitious value is given by such legislation to a mere piece of parchment, and a standard set which cannot be higher than that of the poorest college whose diploma is recognized as a license; and it is quite possible that in many cases persons of fair attainments acquired through extra-collegiate study may be debarred, temporarily at all events, from a right possessed by a far more ignorant graduate of some contemptible school incorporated by a too complaisant Legislature." It is seen, then, that a statute must not only be right in its purposes, but also that it must neither work greater evil than it prevents, nor be impracticable of enforcement. The chief purpose of legislators in times past, Mr. Purrington points out, was the punishment and remedy of evil already committed; but the tendency of modern times is towards prevention—to use a homely simile, locking the door before the thief gets in and the property is taken out.

Mr. Purrington now goes on to discuss the question, within what limits is it wise to exercise the police power of the State to regulate the practice of medicine, and how far can its exercise aid in maintaining a proper standard of medical education? The law, says Mr. Purrington, has nothing to do with medical theories. "The utmost it can do successfully is to prescribe that none shall practice medicine except persons educated in those branches of science that all admit are essential to an understanding of morbid conditions of our species, and possessed besides of a fair general education. It cannot prohibit the practice of sectarian medicine and such delusions as the mind-cure and Christian science, for this would be an assumption by the law to prescribe what system of healing shall be followed; and it might as reasonably command—as, indeed, I believe it does in Mormonism—that all the sick should be treated by

anointing with oil in conjunction with prayer by the elders." Certainly, coming from one learned in the law, this is a surprising statement; and when we remember the principle upon which he says medical legislation is justified—*salus populi*—it does not fall short of being paradoxical. True, the law cannot prohibit theories and opinions of mind-curers and Christian scientists; it cannot prohibit thought; but to say that it cannot prohibit certain practices is a very different matter. Mr. Purrington continues: "If a man who has passed his examinations in such branches as above indicated (the various branches of medicine) shall conclude to adhere uniformly in practice to the doctrines of *similia* or of *contraria*, or even to the profundities of Mumbo Jumbo, or mind-cure, the law cannot prevent him. For his errors, he will be liable always in damages, no matter what system he adopts; and with that we must be content." Hence we must conclude that should the makers of the law, the people, finally come to the conclusion that the "profundities of Mumbo Jumbo" are dangerous, and subversive of the very thing that medical legislation must conserve—*salus populi*—it cannot prohibit such practices, but must be content with holding the practitioner in damages for his errors!

The author, in speaking of the ways in which legislation can aid in maintaining a proper standard of medical education, points out that it can do so chiefly by vesting the licensing power in a central Board of Medical Examiners, and says that the law should not recognize any diploma as of itself conferring the right to practice medicine; the possession of a diploma may be required as antecedent to examination, but it should not be allowed to take the place of such examination. "It is to the interest not only of the public, but of every medical college of high standard, that the diplomas of what have become known as 'diploma mills' shall be deprived of the licensing power, which is their sole value." Legislation, he thinks, may aid in raising the standard by fixing a minimum age under which no one shall be allowed to practice medicine; by requiring a fixed term of study of certainly not less than two graded years (did he mean not less than *three* years?); by requiring proof by examination or certificate that each candidate for license had studied before beginning his professional career at least those branches of a gen-

eral education in which law students are examined in this State (New York) before they commence their legal studies (the reader will of course note the very close relationship between the practice of law and that of medicine, and the similarity of the preliminary educations required for them!); by declaring that no medical school—including in the terms schools of dentistry, pharmacy, and mid-wifery—shall be incorporated by special act, and providing a general law for the incorporation of such schools only upon proof made of the possession by the incorporators of sufficient capital—not less than a hundred thousand dollars—and teaching plant to justify the belief that the school will be capable of exercising faithfully its franchises; the provision of a minimum course of medical study. We cannot agree with Mr. Purrington that the regulation of all details of examinations should be left to the board of examiners. A good law should require that the colleges hold certain examinations during the course and at the expiration of the term of medical study, besides the examination for license by the medical examining board. Nor does the author give any good reason why "it would be most wise to omit any examination in those obscure topics of therapeutics and materia medica."

We have not space for more extended consideration of this paper. Coming from a member of the bar, and the Counsel to the New York County Medical Society, it will most probably have much weight, and is worthy of consideration. The paper seems, unfortunately, to have been prepared hastily; there is nothing to show that the medical laws of other countries had been carefully studied, with the view of grafting their better elements into our laws if possible. "There is too much of the *laissez faire* policy exhibited," is the criticism of a prominent member of the Chicago Bar. With our best colleges demanding three years, and the colleges of foreign countries demanding four years of medical study, it is very late to speak of "not less than two graded years." We hope to see the day when medical legislation in this country will have gone farther in raising the standard of medical education in this country than the point beyond which the author says it would not be wise for the legislation to go.

DR. SOMMER has been appointed Prof. Budge's successor to the Chair of Anatomy at Greifswald.

THE PATHOLOGY OF PERNICIOUS ANÆMIA.

DR. WILLIAM HUNTER has recently concluded, in the *Lancet*, a most interesting paper on this subject, being the record of a series of investigations made with the object of throwing some light on the pathology of the disease called *progressive anæmia* or *pernicious anæmia*. These investigations were partly clinical and partly pathological. It must be said that Dr. Hunter has occupied himself with a most important task, when we remember the interest taken in this affection since Addison called attention to it.

Space is wanting for more than a summary of the results of the investigations, and some short comment upon them. In the first place, he concludes, pernicious anæmia is to be regarded as a special disease, both clinically and pathologically. It constitutes a distinct variety of idiopathic anæmia. *Second*. Its essential pathological feature is an excessive destruction of blood. *Third*. The most important pathological change to be found is the presence of a large excess of iron in the liver. *Fourth*. This condition of the liver serves at once to distinguish pernicious anæmia *post-mortem* from all varieties of *symptomatic* anæmia, as also from the anæmia resulting from the loss of blood. *Fifth*. The blood-destruction characteristic of this form of anæmia differs both in its nature and its seats from that found in malaria, in paroxysmal hæmoglobinuria, and other forms of hæmoglobinuria. *Sixth*. The view can no longer be held that the occurrence of *hæmoglobinuria* simply depends on the quantity of hæmoglobin set free. *Seventh*. On the contrary, the *seat* of the destruction and the *form assumed by the hæmoglobin* on being set free are important conditions regulating the presence or absence of hæmoglobinuria in any case in which an excessive disintegration of corpuscles has occurred. *Eighth*. In paroxysmal hæmoglobinuria the disintegration of corpuscles occurs in the general circulation, and is due to the rapid dissolution of the red corpuscles. *Ninth*. In pernicious anæmia the seat of disintegration is chiefly the portal circulation, more especially that portion of it contained within the spleen and liver, and the destruction is affected by the action of certain poisonous agents, probably of a cadaveric nature, absorbed from the intestinal tract.

Thus it will be seen that Dr. Hunter's investigations seriously disturb some existing illusions

in regard to the pathology of pernicious anæmia—among others, that the affection is dependent upon some impairment of the normal process of blood-formation. The investigations show, also, that pernicious anæmia is quite distinct from the anæmias secondary to and due to wasting diseases, loss of blood, or diseases of the organs of nutrition.

LABORATORIES FOR BACTERIOLOGICAL AND ORIGINAL INVESTIGATION.

The Trustees of the Hoagland Laboratory announce to the medical profession of Brooklyn, N. Y., the completion and equipment for practical work of their laboratory at the corner of Henry and Pacific streets. Dr. Geo. M. Sternberg, the Director, being absent for further prosecution of his investigation into the causes of yellow fever, by order of the President, the course of lectures on bacteriology previously announced will be postponed until his return. But George T. Kemp, Ph.D., Johns Hopkins University, has been appointed as Associate in Bacteriology and Physiology, and with his assistance practical instruction in bacteriology will be given during Winter and Spring.

With fairly well-equipped laboratories for instruction and practical research in bacteriology, physiology and pathology at the Johns Hopkins, Baltimore; at the University, Pennsylvania; the Carnegie, New York; the Hoagland, Brooklyn; the Harvard, Boston; the Chicago Medical College, Chicago; and some others, it can no longer be claimed that American students are obliged to cross the Atlantic either for instruction in these departments or for facilities for prosecuting original researches.

AMERICAN MEDICAL ASSOCIATION.

The Fortieth Annual Meeting of this Association will be held at Newport, R. I., on Tuesday, the 25th of June, 1889, instead of the *first* Tuesday in June, as appointed at the meeting in Cincinnati, for the reasons previously mentioned in THE JOURNAL. Next year will also be the 250th anniversary of the settlement of Newport, and all circumstances favor a meeting of the Association of unusual interest. The Rhode Island State Society is cordially coöperating with the Local Committee of Arrangements. We are informed that acceptances have been received from each of the

gentlemen elected to deliver the general addresses at the meeting in Newport. The Address in Medicine will be given by Professor Wm. Pepper, of Philadelphia; the Address in Surgery by Professor P. S. Connor, of Cincinnati; and the Address in State Medicine by Professor W. H. Welch, of Baltimore.

The following constitute the Local Committee of Arrangements: H. R. Storer, Chairman; W. Thornton Parker, Secretary; C. F. Barker, M. E. Baldwin, C. A. Brackett, J. P. Curley, P. F. Curley, J. P. Donovan, H. Ecroyd, Jr., V. M. Francis, T. A. Kenefick, G. M. Odell, F. H. Rankin, W. C. Rives, Jr., S. H. Sears, W. S. Sherman, H. E. Turner.

Associate Committee, appointed by the Rhode Island Medical Society, G. D. Hersey, W. H. Palmer, G. T. Swarts, all of Providence.

THE AMERICAN ACADEMY OF MEDICINE.

The next annual meeting of this Society is to be held in New York city on the 13th and 14th of November, 1888. It was organized twelve years since, for the very laudable purpose of encouraging a higher standard of literary and scientific education on the part of those who wish to enter upon the study of medicine. As one of the influences favoring the accomplishment of this object, a constitutional provision was adopted making the possession of the degree of Bachelor or Master of Arts, received after a systematic course of study, and of the degree of Doctor of Medicine, followed by three years of practice, necessary conditions of eligibility for membership in the Academy. It was the first, and we think the only attempt that has been made to sustain a National medical society, membership of which was to be restricted to such members of the profession as had received prior to commencing the study of medicine a true collegiate general education.

It was thought by its founders that the establishment of such a society would be a constant stimulus to the ambition of young men intending to enter the medical profession to so extend their general education as to render themselves eligible for membership in it; and that the reports, papers, and discussions elicited at the annual meetings would do much to develop and direct public sentiment on the subject of a higher standard of education and mental discipline as a preparation

for professional life. We hope the meeting in New York will be a large and profitable one, and that it will venture to select Chicago as its next place of annual meeting, or at least some city in the interior valley of the Continent.

PHYSIOLOGY IN THE PUBLIC SCHOOLS.

The readers of the *Century* will remember the very amusing article that appeared about a year ago from the pen of Samuel L. Clemens (Mark Twain), on the answers by public school children to examination questions in the public schools. Several months ago the *Popular Science Monthly*, in commenting on the abuses, educational and otherwise, of the public schools, declared that it was now demonstrated that the public school system should be abolished. In the August number of the *Popular Science Monthly* was an article by "a teacher" on "Physiology in the Public Schools," containing a large number of answers to examination questions. This article shows that physiology is as badly taught in the English as in American public schools, and that the misinformation in regard to the subject of study is due to too much learning by rote without comprehension of the meaning of the terms employed—and to bad teaching; possibly, also, to the fact that children are set at physiological studies at too early an age. And we must agree with what the *London Architect* says in regard to this matter: "These exercises may be thought amusing, but it should be borne in mind that every word represents more or less pain to some unhappy child in endeavoring to recall ponderous words which were without meaning. Education in sanitary matters is desirable, but, as it is at present conducted in public schools, it must injure children's minds by habituating them to the use of words which they cannot understand." Certainly, it is a serious blunder to lumber up the mind of a child with words that carry no meaning. The words of the Wise Man may be applicable here: "In all thy getting get *understanding*."

MEDICAL STATISTICS OF RUSSIA.

The Statistical Annual of the Russian Empire for 1884-85 gives the total population (of Russia in Europe?) as 108,787,235. In 1885 there were 4,597,441 births, with an excess of about 133,000 males; 129,700 children were illegitimate. The

deaths numbered 3,291,824, with an excess of females. The net increase in population was therefore 1,305,617. There were 42,946 violent deaths, including 3,450 homicides and 2,494 suicides.

The deaths from various diseases were: 153,559 from febrile affections; 11,506 from small-pox; 8,505 from scarlatina; 19,320 from diphtheria, 8,024 from measles; 2,123 from pertussis, and 28 from *cholera nostras*. Of 589,274 cases of zymotic disease, 86,229 terminated fatally.

The number of hospitals in Russia in 1884-85 was 867, containing 57,825 beds. To these must be added 17 hospitals containing 8,584 beds for the use of foreigners.

The number of cases of syphilis in Russia in the period mentioned was 399,951. The number of vaccinations practiced was 2,300,404.

The medical *personnel* included, in 1884, 3,302 sanitary physicians, 7,653 physicians of inferior rank, and 3,170 midwives. The eight universities had 4,459 students of medicine.

One is forcibly struck with the insufficiency of the number of medical men for so large a population, with the small number of medical schools, the very large number of medical students as compared with the number of practitioners, and with the value that the Russian Government seems to attach to vital statistics. In spite of their small number the medical profession of Russia have added much that is valuable to the literature of medicine, and would have added much more that is accessible but for their apparently insurmountable language.

EDITORIAL NOTES.

PROFESSOR G. RUGE, of Heidelberg, has been elected Professor of Anatomy in the University of Amsterdam.

A MORGUE FOR LONDON.—A French contemporary states that there is a project for the establishment in London of a morgue similar to that in Paris.

DR. HENRY GRADLE, of this city, we are pleased to say, was acquitted of malpractice in the recent suit against him. We hope to have an account of the case in an early issue.

DR. JOSEPH SARGENT, a well-known practitioner of Worcester, Mass., for almost half a century, died of pneumonia on October 13. He

was born in 1815, and graduated from Harvard Medical School in 1837. He was a man of great public spirit, and his loss will be severely felt by both the profession and the public.

"LAPAROTOMY IN THE TREATMENT OF INTRAPERITONEAL INJURIES," an address delivered before the Medical Society of London by SIR WILLIAM MACCORMAC, has been translated into German by Dr. Thamhayn, Volkmann's assistant, and is issued as one of the numbers of Volkmann's *Sammlung Klinischer Vorträge*.

DURING the recent visit of DR. MORRIS H. HENRY, of New York, to Turkey, he was most kindly treated by the surgeons of Constantinople, and was honored by His Imperial Highness, the Sultan, with the Imperial Order Commander de l'Osmanie, and a present of jewels. This is a gratifying acknowledgment of the interest taken by foreigners in American surgery.

PHARMACY IN RUSSIA is now receiving the attention of the Government. A plan is being prepared by which the status and qualifications of a Master in Pharmacy will be equal to that of the Russian Doctor of Medicine. The Master in Pharmacy will have to spend eight semesters at a university. The two sexes are to have equal privileges. The *Apothekerverein* of Germany has set on foot a movement looking to the same ends.

GYNÆCOLOGICAL SOCIETY OF CHICAGO.—At the annual meeting of this Society, held at the Richelieu Hotel on October 19, the retiring President, Dr. Henry T. Byford, delivered his Annual Address, and the following officers were elected: President, Dr. Charles T. Parkes; First Vice-President, Dr. Edmund J. Doering; Second Vice-President, Dr. E. C. Dudley; Editor, Dr. W. W. Jaggard; Secretary, Dr. Edward Warren Sawyer; Treasurer, Dr. Frank E. Waxham.

OHIO STATE SANITARY ASSOCIATION.—The Sixth Annual Meeting of this Association will be held in the City Hall, Canton, Ohio, November 14th and 15th, 1888. A full and important programme of work has been arranged for the two days' session. The first session will commence at 10 A.M. of the 14th, and the closing meeting will begin at 1 P.M. of the 15th. Arrangements have been made for commutation of railroad fares, but for further information address the Secretary, R. Harvey Reed, M.D., Mansfield, Ohio.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

*Stated Meeting, September 12, 1888.*THE PRESIDENT, J. SOLIS COHEN, M.D.,
IN THE CHAIR.DR. J. SOLIS-COHEN read a paper on
SYPHILIS OF THE LARYNX, TRACHEA, AND
BRONCHII.

Syphilitic processes not only injure the structural integrity of the larynx and trachea directly but, by their location in the regions occupied by the origin and course of nerve supply, they lead to denutrition of the tissues generally, and to serious motor impairments of the muscles of the larynx. The distinctions between secondary and tertiary syphilis, as manifested in the upper air-passages, are so irregular and uncertain, that many writers prefer the terms recent and tardy. In fact, however, secondary lesions are sometimes tardy and tertiary lesions sometimes precocious. Secondary lesions are sometimes present as the sole manifestation of that period. Sometimes they precede cutaneous manifestations. Most frequently they occur in subjects already affected with what are known as mucous patches in other portions of mucous membrane, or with early cutaneous syphilides.

Pathology.—The earliest and far most frequent manifestations are subacute and diffusely hyperæmic conditions of portions of the mucous membrane, of varied extent and intensity; an erythema with turgescence, but without hypersecretion, occurring within from six to ten weeks after infection. The affected surface exhibits at first the usual rose-color of congestion, but, as stasis, infiltrations, and hæmic transudations occur, it becomes more or less livid in patches which present mottled or flaky discolorations. Superficial erosions often ensue. Occasionally deep-seated ulceration occurs. Sometimes paresis of the muscles of the larynx is produced. The erosions may be due simply to denutrition of epithelium from mere pressure by infiltrations, or to disintegration of a characteristic proliferative lesion known as the papule or mucous patch, by some termed broad condyloma, a product, according to Virchow, of the same histological character as the indurated chancre and the various gummy formations, namely, an infiltration of tissue with nucleated embryonic cells. These papules are characteristic, but by no means frequent syphilitic products in the larynx, and are so infrequent in the trachea that their occurrence there is denied by authorities the very highest. They are multiple recurrent lesions, almost invariably associated with mucous patches on other mucous membranes; usually lasting from

three to five weeks, and sometimes much longer. They are observed from within a few weeks to a few months after infection; sometimes earlier, occasionally as late as eighteen months. They are far the more frequent in tuberculous subjects who have contracted syphilis.

The erosions which occur on the surface of the papules or on simply erythematous mucous membranes are usually superficial, but may extend through the mucous membrane and beneath it, under bad hygienic conditions. Under slight provocative exposures to cold and wet, fluxionary œdema sometimes takes place in their vicinity, occasionally to such an extent as to be menacing to life. The epiglottis often becomes very much thickened, the vocal bands thickened and dentedly eroded. There seems to be no tendency for secondary lesions to extend from the larynx to the trachea.

Tertiary lesions come under notice most frequently in the stage of ulceration, usually following the liquefaction of gummous nodules, gummous infiltrations, or true gummata, as may be. The epiglottis is the most frequent seat; so frequent, that its lingual and lateral ulceration has been erroneously deemed pathognomonic of syphilis; but destructive lesions may occur in every portion of the larynx. The ulceration is both serpiginous and deep-seated, and, while more commonly unilateral, there seems practically to be little limit to its phagedenic destructive ravages under unfavorable conditions, as it destroys and penetrates all the tissues, soft and cartilaginous. Slight provocation may produce fluxionary œdema in this stage also, which may be of the most serious character. Serious hæmorrhages may occur from penetration of blood-vessels, and apnoea may ensue from incarceration of fragments of necrosed cartilages and soft tissues. Ulceration may be attended with proliferative vegetations which may occlude the air passages. Superficial ulceration may heal with moderate cicatrization which eventually becomes hardly noticeable. Deep and extensive ulcerations heal under peculiar whitish, lustrous, stellate, retractile cicatrices, similar to those which follow burns. Instead of cicatrizations, adhesions may take place between contiguous raw surfaces, and strictures of various kinds be formed in consequence.

The gummous lesions preceding these ulcerations are of three kinds: small gummous multiple nodules or nodular syphilides; diffuse gummous infiltration; and gummata proper, usually isolated.

Small gummous nodules (nodular syphilide, Lewin) vary in size from that of small bird-shot to that of peas, and are usually grouped in well-defined determinate figures in the body of the mucous membrane, and often so contiguous as to appear confluent. Gummata proper, present as firm hemispherical nodules or tumors, from the size of peas to that of cherries or almonds, and

sometimes much larger, in the connective tissue beneath the mucous membrane; usually uniform in outline, sometimes lobulated; undiscolored or reddish at the base, yellowish at the summit. Gummous infiltrations present as more or less longitudinal or more diffuse submucous thickenings corrugating the surface of the mucous membranes. All these products may undergo absorption.

When not absorbed, gummous nodules undergo purulent liquefaction. At this time they become softer, and more yellowish at the summit, the mucous membrane at the base becoming more inflamed and thickened, the whole mass looking not unlike a furuncle. The summit becomes perforated, and gives exit to thickened, yellow pus, with granular admixture of debris at first. The orifice rapidly enlarges by ulceration until it becomes fully as large in circumference as the nodule was, or larger, and readily coalesces with ulcerations from contiguous nodules. The ulceration extends in depth until it occupies the entire volume of the nodules, and may then penetrate all the tissues beneath, even to the perichondrium and cartilage.

The ulceration of the nodulous syphilide, as studied in a series of cases by Lewin, is said to take place more from periphery to centre than the reverse, being shallow at first, and then gradually deepening. The ulcer is round, depressed, and sharply bordered. Its bed is covered with a secretion which, from previous fatty degeneration, or purulent metamorphosis, is either thickish, or nearly lardaceous, or composed of purulent detritus.

The more longitudinal and the diffuser gummous infiltrations undergo liquefactive ulceration much more slowly; but the subsequent ulceration, when unchecked, extends much more rapidly, and becomes more readily serpiginous and phagedenic; so that, coalescing with similar conditions in the vicinity, large surfaces in continuity become involved in its ravages. As it extends in superficiality it penetrates slowly in depth until it also involves the deeper structures close to the perichondrium, and sometimes to the cartilage. Ulceration varies in rapidity, extent and penetration according to the succulence or resistance of the tissues contiguous. The ulceration from diffuse gummous infiltration is preceded, according to Lewin, by extensive fatty degeneration of its surface, which gives it an almost grayish-white tinge. This is soon followed by actual defects which, at first shallow, increase in depth, and gradually penetrate to the perichondrium and the cartilage. These ulcers are characterized, like those from the nodules, by sharp definite circumscription, and by their being surrounded with an inflammatory swollen zone. They appear often as though a piece of swollen tissue had been cut out. The edges are often beset with slight crenations, which give them a gnawed appearance, but are never undermined; and their bottom is covered with a yellowish-white adherent mass, com-

posed of pus, fatty detritus, and shreds of tissue. Gummata proper sometimes remain unchanged for prolonged periods. When they undergo degenerative metamorphosis there is formed, according to Lewin, only the characteristic viscid fluid, suppuration being exceptional. Ulceration takes place, however, in some instances, and penetrates deeply into the tissues beneath, as in the other two forms. Under unfavorable hygienic conditions of system, or of surroundings, the phagedenic ravages may become uncontrollable. They have been known to attack an artificial opening made to prevent suffocation by a gumma (Holden, *New York Medical Journal*, January 29, 1887).

Perichondritis and chondritis being set up after either form, the ulceration may penetrate the cartilage to the tissues external, forming a perichondrial abscess, which ruptures externally by a more or less circuitous route, whence the fragments of dead tissues are discharged.

Taken in point of frequency the cartilaginous structures seem to be vulnerable in the order following: epiglottis, posterior vocal processes, arytenoids, supra-arytenoids, cricoid, cuneiform and thyroid. Coming to the softer parts, the vocal bands are attacked next in frequency to the epiglottis, the left band far more frequently than the right; the interior supraglottic walls of the larynx, the aryepiglottic folds, the interarytenoid fold, the posterior wall, the ventricular bands, the subglottic walls of the larynx, the exterior of the soft parts in the pyriform sinus. When the cartilages are attacked, whether primitively or consecutively, the chain of morbid phenomena is perichondritis, chondritis, calcification, caries, necrosis, and elimination of sequestra in crumbled masses and in fragments. The elimination of dead cartilages may consume months, and even years. It usually takes place by the interior route, occasionally by the exterior. In both instances abscess and fistula are formed, and elimination of large fragments by the interior route sometimes produces suffocative paroxysms, and occasionally actual suffocation.

The epiglottis, as repeatedly noted, is especially vulnerable to the syphilitic process, and every variety of lesion possible may ensue in any extent, from insignificant erosion to complete destruction, the character of the lesion depending upon that of the structure destroyed. It is this, as pointed out by Seiler, which gives such an irregular conformation to the epiglottis when its glands have been destroyed.

Exulceration of the entire mucous membrane of the edge reveals the exposed cartilaginous structure as a yellowish-white stripe imbedded between two thickened masses of spongy-looking tissue. Ulceration of the cartilage often commences at the anterior surface in the form of a round ulcer with thickened excavated edges. Destructive ulceration usually progresses from the side and from the

edge. When the valve is only partially destroyed its remains may present two or more irregular fragments separated by fissures of varying depth, or a single fragment of any breadth, from a small stripe to nearly the entire bulk.

When totally destroyed the orifice of the larynx is separated from the post-lingual sulcus by a more or less irregular ridge of ulcerated tissue, which, after cicatrization, presents as a pale, deformed stump. This, however, does not, as a rule, prevent gluttony, and in some instances does not even interfere with it; the occlusion of the larynx being effected by the base of the tongue, on the one hand, and by close approximation of the ventricular bands and sphincter-like approximation of the aryepiglottic folds, on the other.

The other cartilages, when the subject of destructive progressive ulceration, are macerated out of their investments, as it were. The ulcerative process extends into the cartilage, surrounding it, if a small one, or circumscribing a portion of it, if it be a large one. The cartilage then perishes by necrosis, is laid bare and becomes detached from its connections, in some instances remaining entangled in a sort of pocket scooped out of the soft tissues. The necrosed cartilage finally breaks through to the interior and is usually discharged by expectoration. If it be situated below the glottis, paroxysms of suffocation may ensue, or even actual apnoea, as from any other foreign body. Exfoliations of the cricoid cartilage are the most frequent source of these untoward results, which, however, sometimes ensue from exfoliations of the thyroid.

The ulcerative process sometimes penetrates blood-vessels and hæmorrhage follows. Such hæmorrhage has been known to terminate fatally (Türk, *Op. cit.*, p. 413, illustrated).

The vocal bands frequently sustain permanent lesion varying from minute losses of substance to entire destruction. Transversal dentated erosion of the border is not uncommon, and detachment from the posterior vocal processes not infrequent. Sometimes irregular papillary proliferations take place, forming mobile, projecting, pyramidal, or irregular dendritic vegetations, which project like soft, mobile stalactites into the interior, and which are large enough, in exceptional instances, to demand operative interference. Similar conditions and productions may prevail with the ventricular bands. Superficial ulcerations may heal with moderate cicatrization, which eventually becomes hardly noticeable. In deep and extensive ulcerations, when cicatrization occurs, a peculiar lustrous, whitish, stellate, contractile cicatrix is formed, similar to the syphilitic cicatrix in other mucous membranes. Instead of cicatrization, adhesions often take place between ulcerated surfaces, and thus a variety of injurious morbid conditions occur. The vocal bands may become united by a broad fibrinous band stretching between

them, or by a similar obturator formed of their thickened and distended mucous membrane. The membranous web thus formed between the vocal bands usually unites them for a variable distance, commencing at the commissure; the posterior border of the structure being crescentic in outline. Exceptionally the cords may become involved their entire length, with an orifice in the central portion of the web (Navratil).

This membranous union has been known to take place in six days (Rossbach: *Langenbeck Archives*, vol. xiv). In a case watched by Sommerbrodt (*Berlin. klin. Woch.*, April 1, 1878), the anterior third united in fourteen days, and the union of the bands was complete in six weeks. In other cases the vocal bands become united without any membrane intervention.

Other adhesions sometimes take place which may seriously impair gluttony, phonation, and even respiration. These comprise depression of the epiglottis to one side or the other, or to an aryepiglottic fold, and preventing proper closure of the valve or complete elevation; adhesion of the epiglottis to either lateral pharyngeal wall; adhesion of ventricular to vocal band, sometimes preventing closure of the glottis, and often producing a shrill, weak, piping voice; adhesions anteriorly of the two vocal bands or of the two ventricular bands; adhesions of the inner surfaces of the mucous membrane of the arytenoid cartilages, so as to fix the vocal bands immovably in the median position. Other results of syphilitic laryngitis are hypertrophies, diffuse and discrete, of mucous membrane, connective tissues, or muscular substance, and consequent stricture, varying in extent, locality, and interference with function; myopathic paralysis; muscular atrophy and morbid growths.

Perichondritis or chondritis, whether following ulcerative destruction of the soft tissues or preceding it, usually excites considerable fibrinous infiltration into the adjacent submucous connective tissue, producing a chronic fibrinous oedema. When extensive, this produces suffocative symptoms, and may threaten asphyxia. Sometimes the submucous infiltrations become organized and transformed into dense fibrous tissues incapable of undergoing absorption, and thus they produce deformity, occlusion of the larynx, and stricture. The strictures are often incapable of yielding to systematic dilatation, even when instituted early; and hence tracheotomy is usually necessary to provide artificial means for respiration below the seat of obstruction. After tracheotomy, the process may progress to complete obliteration.

These strictures are of the most varying form and calibre, some of them distorting the configuration of the interior of the larynx almost out of recognition. Fortunately, most of them occur in the supra-glottic region, where they are far more accessible to effective treatment.

Lesions of either soft tissues or cartilage in the neighborhood of the important crico-arytenoid articulations excite non-specific inflammation of the joint which may produce true or false ankylosis. Syphilis is probably the most frequent cause of this lesion. When the specific process invades the joint, the ligaments and perichondrium suffer, and true ankylosis, or luxation, or disarticulation, and even discharge of the arytenoid and supra-arytenoid cartilages, may ensue.

In the latter stages of unrestrained lesion, the cachexia is much the same as in analogous advanced stages of tuberculosis.

Myopathic paralyses of the muscles of the larynx may occur in the later periods of secondary syphilis, and at any period of tertiary syphilis. They are most frequently unilateral, the left side being affected far oftener than the right. The onset is often sudden or acute, following severe or sudden exposure to cold and dampness. The paralysis often affects the dilator muscles, and bilateral paralysis of the dilators is not infrequent. Paralyses of the arytenoid muscle and of the entire constrictor group are the most frequent varieties. These paralyses differ in their pathological origin from other examples of paralysis in syphilis, which are due, respectively, to compression of the tract of the nerve-supply by diseased tracheo-bronchial glands or other structure, and to neural or cerebral lesions which present in the latter stages of the confirmed dyscrasia.

Tertiary lesions of the trachea are first observed so very frequently in the stage of ulceration, that it had been assumed that tertiary syphilis of the trachea always produces ulceration (Vierling). Schech and others have reported instances of resorption of gummata under specific medication. The clinical tendency, however, is to ulceration. Tracheal ulcerative lesions are sometimes unassociated with lesions elsewhere in the aërial tract. Much more commonly they are found associated with similar lesions in the larynx, in the bronchi, or in both.

Pharyngeal syphilis exists in thirty out of forty-six, collated by Vierling, and pulmonary syphilis in six out of fifty (Schech). They are often found associated with additional syphilitic lesions at a distance. In a large proportion of instances a primitive bronchus is affected, the left one the more frequently; in some, both primitive bronchi; in a few, the smaller ramifications (Vierling); and, exceptionally, even the minutest (Lancereaux). In some instances syphilitic lesion is confined to the bronchia (five cases, by Vierling). The upper portion of the trachea suffers most when the larynx is involved; the lower portion, when the disease is isolated or associated with syphilis of the bronchi. In some instances the middle portion alone suffers (Vigla and Charnal, Berger, Mackenzie, of Baltimore, Semon); exceptionally, the two extremities, with

complete conservation of the middle portion (Tessier, cited by Rey).

When not occurring in direct continuity with similar lesion in the larynx, the most frequent seat of ulceration is in the anterior surface of the lower portion of the trachea just above the bifurcation whence it extends upward, or in patches continuously sometimes as far as the cricoid cartilage; sometimes almost completely around the interior in periphery, occasionally completely around. Multiple perichondritis is easily set up and results in abscess, denudation of cartilage, calcification, caries, and necrosis. Portions of dead cartilage are sometimes coughed up in fragments. Sometimes semi-detached portions project into the interior and interfere seriously with respiration and with expectoration. The ulceration usually begins in a number of small ulcers which extend in depth and in periphery, baring the perichondrium, and causing portions of the cartilaginous rings, or entire rings, to undergo denudation, necrosis, and exfoliation. Coalescence with similar ulcerating surfaces, or phagedenic extension sometimes produces very extensive ravages which may involve nearly the entire circumference of the trachea, and nearly, occasionally quiet, its entire length. Flaps of detached membrane sometimes fall over, producing valvular impediments to inspiration, or to expiration, according to the position of the attachments. The cicatrization of annular ulcerations produces stricture often so low down as to be beyond relief even from tracheotomy, the parts not being well adapted to respond to artificial dilatation. The strictures are irregularly ovoidal in shape, sometimes funnel-shaped, and of varying thickness from a few lines to that of several rings.

These cicatrices may reduce the calibre of the trachea so considerably as to prevent respiration. Occlusion to the calibre of a crowquill is not uncommon, and still greater occlusion has been noted in some instances. Annular stricture at the bifurcation may become so great as barely to admit the passage of a delicate probe. (Obtulowicz: *Cent. f. Chir.*, 1879, No. 7).

Irregular annular dilatation of the trachea is often produced by the pressure of the air current above the stricture and sometimes below it. Even dilatation of the bronchi has been noticed.

Projecting ridges of cicatricial tissue below the point of stricture are sometimes so located as to occlude the inferior orifice of a tracheal canula more or less, a point not sufficiently recognized, for it might be practicable in some instances to push a canula into a position which would allow its inferior extremity to pass the obstruction.

Stricture of the bronchi is rare. It affects the left bronchus more frequently (Verneuiel *et al.*); sometimes the right one (Wilks, *et al.*); occasionally both (Virchow, *et al.*). The connective tissue around the strictured portions usually un-

dergoes permanent sclerotic proliferation. Sometimes there is great peritracheal sclerosis, sometimes none. The peritracheal glands may undergo great enlargement. All these conditions superadded to the internal stricture, may greatly increase stenosis.

Ulceration sometimes penetrates through the trachea producing abscess opening into the œsophagus or the mediastinum, the aorta (Rokitansky: *Path. An.*, Bd. III, p. 22; Wilks: *Trans. Path. Soc.*, London, 1865, p. 52), the pulmonary artery (Kelly: *Id.*, 1872, p. 45), or the vena cava (Turner: *Id.*, xxxvii. p. 117). In at least two instances of ulceration of the left bronchus the left branch of the pulmonary artery has been found perforated. (Vierling).

Inflammation around the trachea or bronchi sometimes produces adhesions to the œsophagus or to other tissues, which depresses the trachea and larynx and impairs their upward movements in glutition. Sometimes it produces peritracheal or tracheo-bronchial abscess. Abscess of bronchus, sometimes deeply seated, has occurred after tracheotomy, apparently as a result of too assiduous swabbing of the canula.

The lesions of hereditary syphilis are almost identical with those of the gummous infiltrations of tertiary syphilis. They sometimes appear very early. Ulcerations have been noticed in infants at 2 months of age (Parrot: *Prog. Méd.*, 1878, p. 653). Stricture from perichondritis has been noticed at the same age (Fränkel: *Wien. Med. Woch.*, 1868, No. 18; Parrot: *loc. cit.*).

Symptomatology.—The laryngeal symptoms of secondary syphilis are not characteristic. They are chiefly comprised in dissonant alterations of the voice, either hoarseness, dysphonia, and in some cases occasional or temporary aphonia. The hoarseness is supposed to have some peculiarity which has been termed *raucedo syphilitica*, but this is not the case. In some instances it is simply due to catarrhal laryngitis, in others to paresis of one or more of the constrictor muscles, or possibly to paralysis of the tensors. Respiration is not affected except in those instances in which œdema occurs in such a position as to occlude the passage of air, when it will be announced by dyspnoea and stridulous respiration, the characteristic symptoms of that condition. Titillation and cough are not as frequent as in inflammations of other origin. In many instances there is no tickling and no cough, no pain and no dysphagia.

Dysphagia is not present unless there be œdema of the parts utilized or pressed upon in glutition.

In tertiary syphilis of the larynx the symptoms are usually those of impairment of phonation, followed in severe cases by dyspnoea and stridor also, chiefly inspiratory. The stridor is worse at night from inaction of the auxiliary muscles of respiration. Should the mechanical impediment to respiration increase, inspiratory depression of

the soft parts below the sternum takes place. If relief is not obtained, artificially or otherwise, asphyxia supervenes from imperfect aëration of the blood. Suffocation may occur suddenly from impaction of detached cartilage; but it is more frequently slow enough in its approaches to allow time for tracheotomy.

Titillation and cough are more frequent in the earlier stages than in secondary syphilis; but they diminish after ulceration has taken place, except in so far as they are produced from time to time by morbid products detained upon diseased and adjacent surfaces. Pain is infrequent before the period of ulceration; after that it may be severe, and radiate into the ears as in other ulcerative diseases. In the early stage there is no expectoration. The earliest expectoration is of collateral catarrhal products only. As ulceration progresses it becomes muco-purulent, and then purulent and sanguineo-purulent, and mixed with detritus according to the stage and location of the lesion.

If gangrene takes place the odor becomes fetid, and the expectoration contains fragments of dead soft and cartilaginous tissue, as may be.

Dysphagia ensues when the disease is in a locality to interfere with glutition, and odympagia when ulcerations have occurred in the same localities.

In tertiary syphilis of the trachea the symptoms affect mainly the function of respiration, the voice often remaining normal even when breathing is seriously embarrassed.

Pain along the course of the trachea, if constant, is indicative of lesion at that particular point. Cases may run their entire course without any special symptom, even in the presence of stricture of the trachea, and of the bronchi, and of extensive disorganization as revealed at the post-mortem examination.

In hereditary syphilis, the symptoms are sometimes congenital and may remain practically continuous for years. Respiration and phonation are both affected. The cry of the infant sometimes possesses a shrill metallic resonance which has been compared to that of a tin trumpet. Cough is more frequent in the child than in the adult. Glutition is often difficult and sometimes painful. Expectoration occurs in the suppurative stages when the child is old enough to expel the products, which by infants are swallowed or retained in the air passages. Laryngismus is a symptom of frequent occurrence in young children.

Etiology.—The probable condition attracting the manifestation of constitutional syphilis to the larynx is superficial catarrhal laryngitis from hereditary or acquired proclivity, or from exposure, or from abuse of tobacco, alcohol, or other indulgence, or from misuse of the voice. Such exposures cause more males to be affected than females, as there is no assignable sexual reason

for preponderance. Tracheal lesions, on the other hand, have been reported more frequently in females, probably because the laryngeal lesion is attended to more promptly by the male. Syphilitic disease often extends by continuity from the oropharyngeal region to the larynx, principally along the pharyngo-epiglottic fold to the epiglottis, and thence along the aryteno-epiglottic fold, and from the two structures to the interior. Hereditary syphilis has been observed in intra-uterine life (Monti: *Med. Times*, Phila., April 28, 1877, p. 336). Hereditary syphilis of the intensest character has been occasionally observed at a very early age, as in the case of an infant whose symptoms began with coryza in the tenth week of life, and terminated in death by suffocation from stenosis nineteen days later. Post-mortem, with examination, revealed in addition to syphilitic lesions in the liver, destructive perichondritis of cricoid and left arytenoid cartilage, and fatty degeneration of arytenoid and both posterior crico-arytenoid muscles and the left superior nerve (Fränkel: *Wien. med. Woch.*, 1868, Nos. 69, 70, cited by Ziemssen and by Mackenzie). Children less than a year of age often show laryngeal lesions of hereditary syphilis, and ulcerative lesions have been seen at two months of age (Parrot; *Prog. Méd.*, 1878, p. 635). Many cases occur in children but a few years of age, and sometimes the manifestations are deferred to the period of puberty or even later. Indeed, in opposition to the received opinion of syphilographers, I have reason to believe that in a few instances I have seen its manifestations delayed as late as the third and even the fourth decennium. True, in such instances as the latter it is quite possible that infection may have been acquired in some method unknown, without having been followed by any secondary manifestations, or that early hereditary manifestations may have escaped recognition. The secondary manifestations occur most frequently in adolescents and young adults. They appear most frequently at periods varying from a few weeks to a few months after infection, sometimes as late as the fourteenth or seventeenth month (Morgan). Tertiary lesions are most frequent at rather maturer ages, and occur occasionally in quite advanced life. They have been reported as early as the sixteenth month (Türk, op. cit.), and as late in their first appearance as the thirtieth (Türk), and even the fiftieth year (Mackenzie). Tracheo-bronchial tertiary lesions have been reported as appearing as early as the ninth month after infection, but these lesions are usually coincident with the laryngeal lesions when not immediately consecutive to them.

Most of the instances of tracheal syphilis occur in individuals whose employments expose them to irritation from dusts of various kinds (Vierling: *Deutsches Arch. f. klin. Med.*, 1878, Bd. 21).

(To be concluded.)

PUBLIC HEALTH.

DISINFECTION AND DISINFECTANTS.

Conclusions of the Committee on Disinfectants of the American Public Health Association.

The most useful agents for the destruction of spore-containing infectious material are:

1. *Fire*. Complete destruction by burning.
2. *Steam under pressure*. 105° C. (221° Fahr.) for ten minutes.

3. *Boiling in water* for half an hour.

4. *Chloride of lime*.¹ A 4 per cent. solution.

5. *Mercuric chloride*. A solution of 1:500.

For the destruction of infectious material which owes its infecting power to the presence of micro-organisms not containing spores, the committee recommends:

1. *Fire*. Complete destruction by burning.
2. *Boiling in water* for ten minutes.
3. *Dry Heat*. 110° C. (230° Fahr.) for two hours.

4. *Chloride of lime*. A 2 per cent. solution.

5. *Solution of chlorinated soda*.² A 10 per cent. solution.

6. *Mercuric Chloride*. A solution of 1:2,000.

7. *Carbolic acid*. A 5 per cent. solution.

8. *Sulphate of copper*. A 5 per cent. solution.

9. *Chloride of zinc*. A 10 per cent. solution.

10. *Sulphur dioxide*.³ Exposure for twelve hours to an atmosphere containing at least 4 volumes per cent. of this gas in presence of moisture.

The committee would make the following recommendations with reference to the practical application of these agents for disinfecting purposes:

FOR EXCRETA.

(a) In the sick-room:

1. Chloride of lime in solution, 4 per cent.

In the absence of spores:

2. Carbolic acid in solution, 5 per cent.
3. Sulphate of copper in solution, 5 per cent.

(b) In privy vaults:

1. Mercuric chloride in solution, 1:500.⁴
2. Carbolic acid in solution, 5 per cent.

(c) For the disinfection and deodorization of the surfaces of masses of organic material in privy vaults, etc.:

Chloride of lime in powder.

FOR CLOTHING, BEDDING, ETC.

(a) Soiled underclothing, bed-linen, etc.:

1. Destruction by fire, if of little value.
2. Boiling for at least half an hour.

¹ Should contain at least 25 per cent. of available chlorine.

² Should contain at least 3 per cent. of available chlorine.

³ This will require the combustion of between 3 and 4 pounds of sulphur for every 1,000 cubic feet of air space.

⁴ The addition of an equal quantity of potassium permanganate as a deodorant, and to give color to the solution, is to be recommended.

3. Immersion in a solution of mercuric chloride of the strength of 1:2,000 for four hours.

4. Immersion in a 2 per cent. solution of carbolic acid for four hours.

(b) Outer garments of wool or silk, and similar articles, which would be injured by immersion in boiling water or in a disinfecting solution:

1. Exposure in a suitable apparatus to a current of steam for ten minutes.

2. Exposure to dry heat at a temperature of 110° C. (230° Fahr.) for two hours.

(c) Mattresses and blankets soiled by the discharges of the sick:

1. Destruction by fire.

2. Exposure to super-heated steam, 105° C. (221° Fahr.) for ten minutes.

(Mattresses to have the cover removed or freely opened.)

3. Immersion in boiling water for half an hour.

FURNITURE AND ARTICLES OF WOOD, LEATHER, AND PORCELAIN.

Washing, several times repeated, with:

1. Solution of carbolic acid, 2 per cent.

FOR THE PERSON.

The hands and general surface of the body of attendants of the sick, and of convalescents, should be washed with:

1. Solution of chlorinated soda diluted with nine parts of water, 1:10.

2. Carbolic acid, 2 per cent. solution.

3. Mercuric chloride, 1:1,000.

FOR THE DEAD.

Envelop the body in a sheet thoroughly saturated with:

1. Chloride of lime in solution, 4 per cent.

2. Mercuric chloride in solution, 1:500.

3. Carbolic acid in solution, 5 per cent.

FOR THE SICK-ROOM AND HOSPITAL WARDS.

(a) While occupied, wash all surfaces with:

1. Mercuric chloride in solution, 1:1,000.

2. Carbolic acid in solution, 2 per cent.

(b) When vacated, fumigate with sulphur dioxide for twelve hours, burning at least three pounds of sulphur for every 1,000 cubic feet of air-space in the room; then wash all surfaces with one of the above-mentioned disinfecting solutions, and afterward with soap and hot water; finally throw open doors and windows, and ventilate freely.

FOR MERCHANDISE AND THE MAILS.

The disinfection of merchandise and the mails will only be required under exceptional circumstances; free aeration will usually be sufficient. If disinfection seems necessary, fumigation with sulphur dioxide will be the only practicable method of accomplishing it without injury.

RAGS.

(a) Rags which have been used for wiping

away infectious discharges should at once be burned:

(b) Rags collected for the paper-makers during the prevalence of an epidemic should be disinfected before they are compressed in bales, by:

1. Exposure to super-heated steam of 105° C. (221° Fahr.) for ten minutes.

2. Immersion in boiling water for half an hour.

SHIPS.

(a) Infected ships at sea should be washed in every accessible place, and especially in the localities occupied by the sick, with:

1. Solution of mercuric chloride, 1:1,000.

2. Solution of carbolic acid, 2 per cent.

The bilge should be disinfected by the liberal use of a strong solution of mercuric chloride.

(b) Upon arrival at a quarantine station, an infected ship should at once be fumigated with sulphurous acid gas, using three pounds of sulphur for every 1,000 cubic feet of air-space; the cargo should then be discharged on lighters; a liberal supply of the concentrated solution of mercuric chloride (4 oz. to the gallon) should be thrown into the bilge, and at the end of twenty-four hours the bilge-water should be pumped out and replaced with pure sea-water: this should be repeated. A second fumigation, after the removal of the cargo, is recommended; all accessible surfaces should be washed with one of the disinfecting solutions heretofore recommended, and subsequently with soap and hot water.

FOR RAILWAY CARS.

The directions given for the disinfection of dwellings, hospital wards, and ships, apply as well to infected railway cars. The treatment of excreta with a disinfectant, before they are scattered along the tracks, seems desirable at all times in view of the fact that they may contain infectious germs. During the prevalence of an epidemic of cholera this is imperative. For this purpose the standard solution of chloride of lime is recommended.

At the annual meeting of the Sanitary Council of the Mississippi Valley, held in New Orleans, La., March 10, 11, 1885, the following resolution was adopted:

Resolved, That the secretary request from the chairman of the Committee on Disinfectants, appointed at the last meeting of the American Public Health Association, a plain, practical paper on "Disinfection and Disinfectants," for popular use and distribution, to be furnished to the chairman or the special committee of this council on General Sanitation.

In compliance with this request a Preliminary Report was prepared, which has been quite widely circulated. This report having been made before the experimental researches of the committee were completed, and being a "preliminary report," was only intended to serve a temporary purpose; but it has been thought best to revise it, and to introduce it into this our final report,

so that it may be available for distribution in a separate form if sanitary officials find it suitable for popular use.

DISINFECTION AND DISINFECTANTS.

The object of disinfection is to prevent the extension of infectious diseases by destroying the specific infectious material which gives rise to them. This is accomplished by the use of disinfectants.

There can be no partial disinfection of such material: either its infecting power is destroyed, or it is not. In the latter case there is a failure to disinfect. Nor can there be any disinfection in the absence of infectious material.

It has been proved for several kinds of infectious material, that its specific infecting power is due to the presence of living microorganisms, known in a general way as "disease germs;" and practical sanitation is now based upon the belief that the infecting agents in all kinds of infectious material are of this nature. Disinfection, therefore, consists essentially in the destruction of disease germs.

Popularly, the term disinfection is used in a much broader sense. Any chemical agent which destroys or masks bad odors, or which arrests putrefactive decomposition, is spoken of as a disinfectant. And in the absence of any infectious disease it is common to speak of disinfecting a foul cesspool, or bad smelling stable, or privy vault.

This popular use of the term has led to much misapprehension, and the agents which have been found to destroy bad odors—deodorizers—or to arrest putrefactive decomposition—antiseptics—have been confidently recommended and extensively used for the destruction of disease germs in the excreta of patients with cholera, typhoid fever, etc.

The injurious consequences which are likely to result from such misapprehension and misuse of the word disinfectant, will be appreciated when it is known that recent researches have demonstrated that many of the agents which have been found useful as deodorizers, or as antiseptics, are entirely without value, for the destruction of disease germs.

This is true, for example, as regards the sulphate of iron or copperas, a salt which has been extensively used with the idea that it is a valuable disinfectant. As a matter of fact, sulphate of iron in saturated solution does not destroy the vitality of disease germs, or the infecting power of material containing them. This salt is, nevertheless, a very valuable antiseptic, and its low price makes it one of the most available agents for the arrest of putrefactive decomposition.

Antiseptic agents, however, exercise a restraining influence upon the development of disease germs, and their use during epidemics is to be

recommended when masses of organic material in the vicinity of human habitations cannot be completely destroyed, or removed, or disinfected.

While an antiseptic agent is not necessarily a disinfectant, all disinfectants are antiseptics; for putrefactive decomposition is due to the development of "germs" of the same class as that to which disease germs belong, and the agents which destroy the latter also destroy the bacteria of putrefaction when brought in contact with them in sufficient quantity, or restrain their development when present in smaller amounts. A large number of the proprietary "disinfectants," so-called, which are in the market, are simply deodorizers or antiseptics, of greater or less value, and are entirely untrustworthy for disinfecting purposes.

Antiseptics are to be used at all times when it is impracticable to remove filth from the vicinity of human habitations, but they are a poor substitute for cleanliness. During the prevalence of epidemic diseases, such as yellow fever, typhoid fever, and cholera, it is better to use in privy-vaults, cess-pools, etc., those antiseptics which are also disinfectants, *i.e.*, germicides; and when the contents of such receptacles are known to be infected, this becomes imperative.

Still more important is the destruction at our seaport quarantine stations of infectious material which has its origin outside of the boundaries of the United States, and the destruction within our boundaries, of infectious material given off from the persons of those attacked with any infectious disease, whether imported or of indigenous origin.

In the sick-room we have disease germs at an advantage, for we know where to find them as well as how to kill them. Having this knowledge, not to apply it would be criminal negligence, for our efforts to restrict the extension of infectious diseases must depend largely upon the proper use of disinfectants in the sick-room.

GENERAL DIRECTIONS.

Disinfection of Excreta, etc. The infectious character of the dejections of patients suffering from cholera and from typhoid fever is well established; and this is true of mild cases and of the earliest stages of these diseases as well as of severe and fatal cases. It is probable that epidemic dysentery, tuberculosis, and perhaps diphtheria, yellow fever, scarlet fever, and typhus fever, may also be transmitted by means of the alvine discharges of the sick. It is therefore of the first importance that these should be disinfected. In cholera, diphtheria, yellow fever, and scarlet fever, all vomited material should also be looked upon as infectious. And in tuberculosis, diphtheria, scarlet fever, and infectious pneumonia, the sputa of the sick should be disinfected or destroyed by fire. It seems advisable also to treat the urine of patients sick with an infectious

disease with one of the disinfecting solutions below recommended.

Chloride of lime, or bleaching powder, is perhaps entitled to the first place for disinfecting excreta on account of the rapidity of its action. The following standard solution is recommended:

Dissolve chloride of lime of the best quality⁵ in pure water, in the proportion of six ounces to the gallon.

Use one quart of this solution for the disinfection of each discharge in cholera, typhoid fever, etc.⁶ Mix well, and leave in the vessel for at least one hour before throwing into privy-vault or water closet. The same directions apply for the disinfection of vomited matters. Infected sputum should be discharged directly into a cup half-full of the solution. A 5 per cent. solution of carbolic acid may be used instead of the chloride of lime solution, the time of exposure to the action of the disinfectant being four hours.

Disinfection of the person. The surface of the body of a sick person, or of his attendants, when soiled with infectious discharges, should be at once cleansed with a suitable disinfecting agent. For this purpose solution of chlorinated soda (liquor sodæ chlorinatæ) diluted with nine parts of water, or the standard solution of chloride of lime diluted with three parts of water, may be used. A 2 per cent. solution of carbolic acid is also suitable for this purpose, and under proper medical supervision the use of a solution of corrosive sublimate—1:1,000—is to be recommended.

In diseases like small-pox and scarlet fever, in which the infectious agent is given off from the entire surface of the body, occasional ablutions with the above mentioned solution of chlorinated soda are recommended.

In all infectious diseases the body of the dead should be enveloped in a sheet saturated with the standard solution of chloride of lime, or with a 5 per cent. solution of carbolic acid, or a 1:500 solution of corrosive sublimate.

Disinfection of clothing. Boiling for half an hour will destroy the vitality of all known disease germs, and there is no better way of disinfecting clothing or bedding which can be washed than to put it through the ordinary operations of the laundry. No delay should occur, however, between the time of removing soiled clothing from the person or the bed of the sick and its immersion in boiling water, or in one of the following solutions until this can be done:

Corrosive sublimate one drachm to the gallon of water (about 1:1,000), or,

Carbolic acid, pure, one ounce to the gallon of water (1:128).

⁵ Good chloride of lime should contain at least 25 per cent. of available chlorine (page 92). It may be purchased by the quantity at 3½ cents per pound. The cost of the standard solution recommended is, therefore, but little more than 1 cent a gallon. A clear solution may be obtained by filtration or by decantation, but the insoluble sediment does no harm, and this is an unnecessary refinement.

⁶ For a very copious discharge, use a large quantity.

The articles to be disinfected must be thoroughly soaked with the disinfecting solution and left in it for at least two hours, after which they may be wrung out and sent to the wash.

N. B. Solutions of corrosive sublimate should not be placed in metal receptacles, for the salt is decomposed and the mercury precipitated by contact with copper, lead, or tin. A wooden tub or earthen crock is a suitable receptacle for such solutions.

Clothing or bedding which cannot be washed should be disinfected by steam in a properly constructed disinfection chamber. In the absence of a suitable steam disinfecting apparatus, infected clothing and bedding should be burned.

Disinfection of the sick-room. In the sick-room no disinfectant can take the place of free ventilation and cleanliness. It is an axiom in sanitary science that it is impracticable to disinfect an occupied apartment for the reason that disease germs are not destroyed by the presence in the atmosphere of any known disinfectant in respirable quantity. Bad odors may be neutralized, but this does not constitute disinfection in the sense in which the term is here used. These bad odors are, for the most part, an indication of want of cleanliness, or of proper ventilation; and it is better to turn contaminated air out of the window or up the chimney than to attempt to purify it by the use of volatile chemical agents, such as carbolic acid, chlorine, etc., which are all more or less offensive to the sick, and are useless so far as disinfection—properly so called—is concerned.

When an apartment which has been occupied by a sick person with an infectious disease has been vacated, it should be disinfected. The object of disinfection in the sick-room is mainly the destruction of infectious material attached to surfaces, or deposited as dust upon window ledges, in crevices, etc. If the room has been properly cleansed and ventilated while still occupied by the sick person, and especially if it was stripped of carpets and unnecessary furniture at the outset of his attack, the difficulties of disinfection will be greatly reduced.

All surfaces should be thoroughly washed with the standard solution of chloride of lime diluted with three parts of water, or with 1:1,000 solution of corrosive sublimate. The walls and ceiling, if plastered, should be subsequently treated with a lime-wash. Especial care must be taken to wash away all dust from window ledges and other places where it may have settled, and thoroughly to cleanse crevices and out-of-the-way places. After this application of the disinfection solution, and an interval of twenty-four hours or longer for free ventilation, the floors and wood-work should be well scrubbed with soap and hot water, and this should be followed by a second more prolonged exposure to fresh air, admitted through open doors and windows.

As an additional precaution, fumigation with sulphurous acid gas is to be recommended, especially for rooms which have been occupied by patients with small-pox, scarlet fever, diphtheria, typhus fever and yellow fever. But fumigation with sulphurous acid gas alone, as commonly practiced, cannot be relied upon for disinfection of the sick-room and its contents, including bedding, furniture, infected clothing, etc., as is popularly believed.

When fumigation is practiced, it should precede the general washing with a disinfecting solution heretofore recommended. To ensure any results of value, it will be necessary to close the apartment to be disinfected as completely as possible by stopping all apertures through which the gas might escape, and to burn not less than three pounds of sulphur for each thousand cubic feet of air space in the room. To secure complete combustion of the sulphur, it should be placed in powder or in small fragments, in a shallow iron pan, which should be set on a couple of bricks in a tub partly filled with water, to guard against fire. The sulphur should be thoroughly moistened with alcohol before igniting it.

Disinfection of privy vaults, cesspools, etc. When the excreta (not previously disinfected) of patients with cholera or typhoid fever have been thrown into a privy vault, this is infected, and disinfection should be resorted to as soon as the fact is discovered, or whenever there is reasonable suspicion that such is the case. It will be advisable to take the same precautions with reference to privy vaults into which the excreta of yellow fever patients have been thrown, although we do not definitely know that this is infectious material.

For this purpose the standard solution of chloride of lime may be used in quantity proportioned to the amount of material to be disinfected, but where this is considerable it will scarcely be practicable to sterilize the whole mass. The liberal and repeated use of this solution, or of a 5 per cent. solution of carbolic acid will, however, disinfect the surface of the mass, and is especially to be recommended during the epidemic prevalence of typhoid fever or of cholera.

All exposed portions of the vault, and the wood-work above it, should be thoroughly washed down with the disinfecting solution. Instead of the disinfecting solutions recommended, chloride of lime in powder may be daily scattered over the contents of the privy vault.

Disinfection of ingesta. It is well established that cholera and typhoid fever are very frequently, and perhaps usually, transmitted through the medium of infected water or articles of food, and especially milk. Fortunately we have a simple means at hand for disinfecting such infected fluids. This consists in the application of heat. The boiling temperature maintained for half an

hour kills all known disease germs. So far as the germs of cholera, yellow fever, and diphtheria are concerned, there is good reason to believe that a temperature considerably below the boiling point of water will destroy them. But in order to keep on the safe side, it is best not to trust anything short of the boiling point (212° F.) when the object is to disinfect food or drink which is open to the suspicion of containing the germs of any infectious disease.

During the prevalence of an epidemic of cholera it is well to boil all the water for drinking purposes. After boiling, the water may be filtered, if necessary to remove sediment, and then cooled with pure ice if desired.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Novel Treatment of Meningitis—Chemistry for Pharmacists—A University for London—The Pasteur Treatment—Nephrorrhaphy for Movable Kidney—Ichthyol in Erysipelas.

Singular superstitions prevail in Paris, despite its claim to be the centre of modern civilization. A woman, whose child was suffering from meningitis, concluded to try an old-wives' remedy, and she accordingly allowed a pigeon to be killed on the little patient's head, in belief that the malady would be absorbed by the pigeon's flowing blood. The doctor in attendance learned, to his surprise, that the practice is by no means uncommon, and that one woman in the Halles sells on a daily average ten or twelve pigeons destined for this singular sacrifice.

From the address of Sir Henry Roscoe at the opening of the forty-seventh session of the School of Pharmacy, he mentioned that for skill and cunning in the discovery and preparation of "simples," the German pharmacist leaves his English brother really nowhere. Well might the President of this inaugural gathering ask why it is that so much more is done on the Continent than in England in the preparation of rare drugs and in the discovery of new ones, of artificial febrifuges and antipyretics, to say nothing of such interesting bodies as saccharin and other products of foreign science and skill. "It is simply," says Sir Henry, "because a more ample opportunity is given to him for the study of chemistry in its higher stages and in its application to pharmacy than has hitherto been accorded to us." It is consoling, however, to be assured that the Research Laboratory of the School of Pharmacy will do something to set this matter right.

The event of the past week has been the commencement of the winter session in the medical

schools. Up to the present the entrances of fresh students have been decidedly below the average of past years. Professor John Eric Erichsen, speaking at King's College, stated that King's College and University College had coöperated in furthering one of the noblest and greatest educational works ever propounded in London, viz.: the endeavor to establish, for the first time in the history of London, a University in and for London. A Royal Commission had been sitting for some months to consider the advisability of acceding to the petition of the two Colleges for the proposed new University. There was a great deal of misapprehension in the public mind as to the proposed Albert University. The sons and daughters of Londoners suffered much from the difficulty of obtaining a thorough university education in the metropolis, and it was now necessary for them to go to distant institutions in pursuit of such an education. But both King's College and University College possessed every requisite for that system of university education. Taking their size, wealth and endowments, and their general position as educational establishments, the governing bodies of the colleges felt that they were fully justified in petitioning that University rank might be conferred upon them. If the petition were granted, and if University rank were granted to the two Colleges, in connection especially with the medical schools of London, they would be able to start at once with a body of undergraduates more numerous than that possessed by any University in the United Kingdom. It would number something like 2,000 or, if those who would come in from other medical schools were included, the number would be considerably over 3,000. The medical profession was, the Professor said in conclusion, the Republic of Medicine in this sense—that there was no hereditary road to it, and there was no privileged class in it. Every position in it was open to all men who had the ability to aspire to and the will to seize it.

Detractors of Professor Pasteur are attaching great importance to the case of a young man who has just died of hydrophobia twenty-seven months after the completion of the Pasteur treatment. The deceased, a farmer 26 years of age, was bitten by a mad dog in the month of May, 1886, in the little finger of the right hand. On the tip of the finger there were three wounds, which were in the first place cauterized with a red-hot iron—this precaution, however, not being taken until two or three days after the accident. Soon afterwards the farmer came to Paris, presented himself at the Pasteur laboratory and underwent the usual course of treatment. He returned home and enjoyed his usual health until the summer of the present year, when he caught a slight cold and complained of pain in the bitten finger. The pain rapidly extended to the arm, the shoulder and the right side, and a day or two subsequently he became

convulsive and was removed to a hospital, where he died with all the usual symptoms of rabies. The conclusion M. Pasteur's adversaries draw from this case is that the eminent Professor's system offers no guarantee against the terrible consequences that may attend the bite of a mad dog. Probably, however, M. Pasteur will have something to say respecting the case referred to which will give it another aspect.

Mr. Gould has recently, at the Middlesex Hospital, successfully performed the operation of fixing a movable kidney. Mr. Gould considers the mode of passing the suture of great importance. Instead of making a large curved needle, such as is usually employed, carry the suture at a single sweep through the organ and lumbar aponeurosis, he prefers first to pass the suture through the kidney, taking up as broad a piece of its capsule and cortex as possible, and then to pass each end of the suture through its corresponding portion of the lumbar aponeurosis. Two sutures passed in this manner are found sufficient to hold the kidney firmly, and if they are tied carefully, the chance of their cutting out through the kidney, and so not holding it so securely as desired, are reduced to a minimum. A subsidiary advantage of the buried suture is that the wound can be closed smoothly and accurately by the ordinary sutures. When the kidney is fixed by external sutures they pucker the wound and interfere with the most rapid and perfect healing. As to the material of the deep sutures, Mr. Gould considers silk, as being more durable than gut or tendon, would be preferable, were it not that it is more difficult to render absolutely aseptic than is kangaroo tendon. That, at any rate, is his experience; and the tendon has answered so well in his hands as a ligature in ovariectomy and as a suture in the radical cure of hernia, that he uses it with full confidence.

Ichthyol for erysipelas has been successful in the hands of some medical men. It is used in combination with ether, 10 parts of each in 180 parts of collodion, as a local application. An ointment composed of equal parts of ichthyol and vaseline has also been successfully employed.

DOMESTIC CORRESPONDENCE.

Monstrosities and Mental Impressions.

Dear Sir:—The article in THE JOURNAL of October 13th reminds us that for ages woman has been tortured with fears and anxieties created by those who should be her shield and strength. Hardly a woman since Satan

"Squat like a toad close at the ear of Eve,
Assaying by his devilish arts to reach
The organs of her fancy,"

has gone through her pregnancy without experi-

encing an impression far more potent than catching a frog instead of a fish. If by any law her fears, and hopes, and desires could change the form of her unborn child, the race would long ago have been transformed to beasts and birds and creeping things. The "ring-streaked, speckled and spotted" results of Jacob's experiments on Laban's ewes would be nothing to the markings of mankind, and we might well question the wisdom of the All Wise, as well as the power of Him who ordained "each after his kind." But from the myriad impressions, powerful impressions, made upon expectant mothers, how many leave "mother's marks," and how many mother's marks conform to any given impression? What physician has not been consulted about such impressions, and who has not had cases corresponding with this? The husband of Mrs. —, in a playful mood, brought from the barn a handful of hairless young rats, and saying to his young wife, a few weeks advanced in her first pregnancy, "Here, my dear," emptied them into her extended hands. She dropped them upon the floor and shudderingly exclaimed, "My baby will look like those things." She believed in her power to impress the child. The fear tortured her through the long months of pregnancy, and when the babe was born her first question was "Does it look like a rat?" It is hardly necessary to say it did not. Or who has not had experiences like this: The child was born, and the good ladies in attendance asked "What did you see? No? Why you must have seen something." And so they strove to find the impression that caused spina bifida. Or the child is born with an anastomotic aneurism on the head, and after many questions and cross-questions about cherries and strawberries and plums the mother at last remembers that she longed for plums.

We have seen many and various "marks" and deformities, but none that conformed any more nearly to a given idea in the mother's mind than the horse's mane in Nelligan's plates on skin diseases, or Dr. Jessup's frog; and if mothers can't do better than these examples they may as well give up mental impression art.

Let us glance a moment at the logic of what might only cause a smile if it was not the source of painful anxiety in those we love. When an ovary becomes an embryonic cell it is a new life and differentiates and proliferates other cells in harmony with its individuality. Henceforward it appropriates whatever it receives, whether from the mother's blood or breast, from cow or cook, in accordance with the laws of its own organism, and the mother has no more power through a mental impression upon her blood or milk to make its development conform to a given idea than the cow or the cook. She may, through the undue exercise of the emotions, through improper diet or disease poison the food she provides, but that is

the extent of her power. When it has entered another organism it is beyond her control. She cannot by any mental impression cause a maldevelopment in her own body conforming to a given idea. Much less can she produce such a result in another, however closely related to her.

Are we pointed to wonderful experiences and asked to account for them? Experience and mysticism prove anything from the cures of homeopathic dynamizations and "Christian Scientists," to "mother's marks." But as with the nostrum vender, their proof lies in advertising exceptional results, and forgetting alike the great body of facts and physiological, pathological and therapeutic principles.

The head of the foetus, being its heaviest part, ordinarily lies next the vagina. Plums, cherries, etc., are usually found about the head and shoulders. If elsewhere, note if the child had not some other presentation. A slight *punch* is sufficient in early foetal life to cause an anastomotic aneurism or other *mark*.

In 1885 we waited on Mrs. —. The baby had no forehead. The top of the head was flat and covered with bony nodules. The expression of the child was idiotic, and its limbs imperfectly developed. We saw in the expression and the imperfect development sequents of an injured and undeveloped brain. We did not inquire about mental impressions but had a history of libidinous connection that produced the conviction that quite another kind of impression had caused what we saw.

We know that some malformations are considered violations of all law—a law unto themselves. If so, we cannot account for their deformities. But, can there be any effect without an efficient cause? Our profession and humanity demands that we seek such cause and strive to quiet the cruel fears of those who bear the curse "In sorrow thou shalt bring forth children."

W. L. SCHENCK, M.D.

Osage City, Kansas, Oct. 16, 1888.

MISCELLANEOUS.

AMERICAN PUBLIC HEALTH ASSOCIATION.—The Sixteenth Annual Meeting of the American Public Health Association will be held in Milwaukee, Wis., on Tuesday, Wednesday, Thursday and Friday, November 20, 21, 22, 23, 1888, at the Athenaeum Hall, commencing at 10 A. M. Reduced R. R. rates can be secured from all sections of the country on the certificate plan. Papers and reports have been announced as follows:

The President's Address.

"The History and Administration of Quarantine in Texas, 1878 to 1888."—By R. Rutherford M.D., State Health Officer of Texas.

"The Canadian System of Maritime Sanitation."—By F. Montizambert, M.D., Quarantine Officer at Grosse Isle, St. Lawrence River.

"Yellow Fever: Panics and Useless Quarantines—its

Limitation by Temperature."—By John H. Rauch, M.D., Secretary of the State Board of Health of Illinois.

"The Organization of the National Health Service."—By Henry P. Walcott, M.D., President State Board of Health of Massachusetts.

"State Boards of Health."—By Ezra M. Hunt, M.D., Secretary of State Board of Health of New Jersey.

"The Difficulties and Success of the Public Health Service in Large Cities."—By Oscar C. DeWolf, M.D., Health Commissioner of Chicago.

"Ontario Sanitary Legislation, its Strength and its Weakness."—By John Coventry, M.D., Medical Health Officer of Windsor, Ontario, Canada.

"The Destruction of Organic Matter by Fire as a Sanitary Measure—Garbage Furnaces."—By S. S. Kilvington, M.D., President of the Board of Health of Minneapolis.

"Vaccination as a Protection from the Infection of Small-Pox."—By D. W. Hand, M.D., President of the State Board of Health of Minnesota.

"Tuberculosis, its Origin, Detection, and Control."—By D. E. Salmon, D.V.M., Chief of the Bureau of Animal Industry, Washington.

"Veterinary Sanitary Work in Wisconsin, with Special Reference to Diseases Communicable to Man."—By V. T. Atkinson, D.V.M., State Veterinarian of Wisconsin.

"The Relations of Bacteriology to the Discovery and Prevention of Causes of Infectious Diseases among Men and Animals."—By Theobald Smith, M.D., of the Bacteriological Laboratory of the Bureau of Animal Industry, Washington.

"Popular and Scholastic Education in Hygiene."—By J. T. Reeve, M.D., Secretary State Board of Health of Wisconsin.

"Remarks on the Classification of Diseases."—By Henry B. Baker, M.D., Secretary of the Michigan State Board of Health.

"Meteorological Observations as Respects Disease Prevalence."—By Prof. Payne, Director of Observatory, Northfield, Minn.

"Some Personal Observations on Yellow Fever and its Habitudes as Opposed to the Fallacies and Dangers of Personal Quarantine."—By A. N. Bell, M.D., Brooklyn, N. Y.

Valuable reports have been promised from several of the committees. Arrangements have been made for the use of the stereopticon by any who desire to avail themselves of it in illustrating papers presented, as has already been announced by circular from the president's office.

WASHINGTON OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—At the annual business meeting held October 19, 1888, the following officers were elected for the ensuing term:

Joseph Taber Johnson, M.D., President; D. Webster Prentiss, M.D., and W. W. Johnston, M.D., Vice-Presidents; George Byrd Harrison, M.D., Treasurer; Samuel S. Adams, M.D., Recording Secretary; G. Wythe Cook, M.D., Corresponding Secretary.

AMERICAN ACADEMY OF MEDICINE.—The American Academy of Medicine will hold its next annual meeting at the New York Hospital, on Tuesday and Wednesday, November 13 and 14. Papers will be read by Drs. H. I. Bowditch, of Boston; Theophilus Parvin, of Philadelphia; Leartus Connor, of Detroit; L. D. Bulkley, of New York; J. C. Wilson, of Philadelphia; E. Andrews, of Chicago; Geo. J. Fisher, of Singing, N. Y.; C. C. Bombaugh, of Baltimore; R. L. Sibbet, of Carlisle, Pa.; W. F. Waugh, of Philadelphia; and the President's Address, by Dr. F. H. Gerrish, of Portland, Maine.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from October 20, 1888, to October 26, 1888.

Col. Charles Page, Asst. Surgeon-General, Medical Director of the Department, will proceed to and inspect the

Medical Department at Fts. Ellis, Tex.; Supply, Reno, Sill and Gibson, I. T.; Ft. Leavenworth, Kan., and the Leavenworth Military Prison, in the order named, and upon completion of this duty return to these Hdqrs. Par. 1, S. O. 127, Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., October 15, 1888.

Major William D. Wolverton, Surgeon, is relieved from duty at Ft. D. A. Russell, Wyom. Ter., and will report in person to the commanding officer, Ft. Douglas, U. T., for duty at that post. Par. 16, S. O. 248, Hdqrs. of the Army, A. G. O., Washington, October 24, 1888.

Major William H. Forwood, Surgeon U. S. Army, Ft. Snelling, Minn., is granted leave of absence for one month, on surgeon's certificate of disability. S. O. 100, Hdqrs. Dept. of Dak., St. Paul, Minn., October 20, 1888.

PROMOTION.

Capt. Leonard Y. Loring, Asst. Surgeon, to be Surgeon, with the rank of Major, October 9, 1888, vice Meacham, deceased.

Capt. Paul R. Brown, Asst. Surgeon, is relieved from duty at Ft. Sidney, Neb., and will report in person to the commanding officer, Ft. D. A. Russell, Wyom. Ter., for duty at that post. Par. 16, S. O. 248, Hdqrs. of the Army, A. G. O., Washington, October 24, 1888.

Major John W. Williams, Surgeon, leave of absence granted in S. O. 209, October 4, 1888, is extended one month, by direction of the Secretary of War. Par. 14, S. O. 246, A. G. O., October 22, 1888.

Capt. Edward C. Carter, Asst. Surgeon, granted leave of absence for one month, by direction of the Secretary of War, to take effect on the completion of his present duties. Par. 13, S. O. 246, A. G. O., October 22, 1888.

By direction of the Secretary of War, First Lieut. William C. Borden, Asst. Surgeon, is relieved from duty at San Antonio, Tex., and will report in person to the commanding officer, Ft. Ringgold, Tex., for duty at that post. Par. 11, S. O. 247, A. G. O., Washington, October 23, 1888.

First Lieut. R. R. Ball, Asst. Surgeon U. S. Army, granted leave of absence for one month, with permission to apply for an extension of one month. Par. 3, S. O. 129, Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., October 13, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending October 27, 1888.

P. A. Surgeon Howard Smith, detached from the "Wabash" and granted six months' leave, with permission to leave the United States

Asst. Surgeon E. W. Auzal, ordered for examination preliminary to promotion to P. A. Surgeon.

Asst. Surgeon F. W. F. Wieber, ordered for examination preliminary to promotion to P. A. Surgeon.

Asst. Surgeon E. W. Auzal, after examination, detached from Naval Academy and to Navy Yard, New York.

Asst. Surgeon J. F. Uric, detached from the "Franklin" and to Coast Survey Str. "Gedney."

Asst. Surgeon Thos. Owens, detached from Coast Survey Str. "Gedney," and to Coast Survey Str. "Blake."

Asst. Surgeon F. A. Berryhill, detached from Coast Survey Str. "Blake" and to Naval Academy.

Asst. Surgeon A. N. T. Harris, detached from Naval Hospital, Mare Island, Cal., and wait orders.

P. A. Surgeon John H. Hall, detached from the "Monongahela" and wait orders.

P. A. Surgeon M. A. Crawford, detached from the "Vandalia" and to the "Monongahela."

CORRIGENDA.

TREATMENT OF SACRO-ILIAC TUBERCULOSIS.

Dear Sir:—Will you kindly correct, in a note in your next number, the statement in my article of October 20, 1888, page 553, that Prof. Sayre's first operation-case was not previously published? I am advised that it was published in the *Medical Record*, of New York, Feb. 6, 1879.

Very sincerely,
WELLER VANHOOK,
834 W. Madison St., Chicago.

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No. 19.

ORIGINAL ARTICLES.

THE RADICAL CURE OF VARICOCELE, ATTENDED WITH REDUNDANCY OF SCROTUM, DEMONSTRATED BY TIME.

Announced—but not read—before the Section on Surgery, at the Thirtieth Annual Meeting of the American Medical Association, May, 1888.

BY MORRIS H. HENRY, M.A., M.D., LL.D.,

OFFICER OF THE ROYAL ORDER OF THE SAVIOR, OF GREECE; COMMANDER OF THE IMPERIAL ORDERS OF THE MEDJIDIE AND OF LOSMANIE, OF TURKEY; FORMERLY SURGEON-IN-CHIEF OF THE STATE EMIGRANT HOSPITALS OF NEW YORK, ETC.

The surgical treatment of varicocele has attracted the attention of many distinguished surgeons of the day—mainly, however, among those who devote more or less especial attention to diseases of the genito-urinary organs. All surgical operations are performed for the relief or cure of disease, whether it be of an acute or chronic nature, and time alone can demonstrate the true value of any special surgical procedure.

The impression still prevails, among many of what might be termed the older surgeons, that varicocele is a disease that does not often call for surgical interference, because it can be borne by many suffering from the disease—to a limited extent—with the aid of a suspensory bandage or a flexible metal ring. In conversations with a number of those entertaining or expressing these views I am led to believe that the fear of bad results, or failure in the ligation of the veins, is the source of their impressions and their aversion to any surgical interference. I believe that non-interference may, in many instances, be of greater benefit to the patient than ligation of the veins. Every surgeon knows of the uncertainty of this operation—not only of its failure to cure, but the risk of inducing atrophy of the testes, and the excitation of inflammation to the extent of danger to life. The only argument, deserving consideration, offered by those who advocate non-interference is, that in a large number of cases the disease is not a real source of physical disability, and can be borne without much discomfort with the aid of a bandage, just as a hernia can be endured with the assistance of a truss. Sir James Paget, one of the oldest and most distinguished of living surgeons, expressed these views to me in a conversation I had with him about three years ago. He re-

marked, however, that he had retired from the field of operative surgery and had become very conservative in his views; and that, except in cases of those who desired to enter or remain in the public service, army and navy, or in positions requiring physical endurance, he was averse to any surgical interference. When I suggested that surgical aid was justified to relieve the annoyances, distress, pain and mental anxieties, the only answer that he made was: "Well, only an absolute physical disability would induce me to sanction an operation looking to the obliteration of the spermatic veins. I have never performed excision of the redundant scrotum; while it is less dangerous, I shall not have an opportunity of testing its merits. As I have already said, I have retired from operative surgery."

My purpose is not to call especial attention to the physical and other disabilities induced by the presence of even slight cases of varicocele; but to advocate, to the fullest extent of my ability, the advantages of excision of the redundant scrotum over all other methods hitherto pursued for its relief and cure.

My convictions and conclusions are based on the results of a large experience, and of extraordinary opportunities of physical examinations, covering a period of more than twenty-five years. While pursuing my own clinical observations I have not been unmindful of the labors of my colleagues, nor less watchful of the result of their cases than of my own—that is, as far as opportunities have been afforded.

The honor of the first suggestion of the operation is due to Sir Astley Cooper. He published, in his classic volume on the structure and diseases of the testis, 1841, a report of five cases in which he operated, and an additional case, with some extraordinary features, submitted by his colleague, Mr. Key; who was also in favor of the operation and with a strong preference over that of ligation of the veins. There can be no doubt that the distrust of the value of ligations of the veins, amongst British surgeons, was due to the influence and teachings of the surgeons I have just mentioned. But the new operation did not meet with any great amount of favor, owing to the fear of severe hæmorrhage in its performance, and the permanency of benefit as a final result.

The German surgeons paid little or no heed to it, and the French surgeons became absorbed in the gradual constriction of the veins, leading to their obliteration, suggested by the brilliant Ricord. Curling, who has been for many years, and is still to a great extent, the British Mentor in this department of surgery, has ignored the operation, but with no additional reason to sustain his objections.

My own first practical knowledge of the operation—over thirty years ago, and while yet an undergraduate—was in being accidentally asked to assist the late distinguished and erratic Edward H. Dixon, an alumnus of the College of Physicians and Surgeons, of New York, who performed the operation on a young lawyer. That operation was not a success. The failure was due to the method of operation, and the method was faulty owing to the want of proper instruments for the performance. But to Dixon must be accorded the credit of first calling attention to the operation in this country. I am fully sustained in this view by the testimony of the oldest member of the firm of Tiemann & Co., the celebrated instrument-makers; the origin of the firm antedating the period of Sir Astley Cooper's first publication on this subject. I have examined patterns of all the instruments they have made, and heard of the many embryonic efforts of others that never fulfilled a period of gestation. Dixon's instrument consisted of two curved steel bars about 4 inches in length and $\frac{1}{4}$ inch in thickness, perforated at each end for the introduction of screws to hold the bars together when embracing the tissues to be removed. It was a failure. Many attempts have been made by others, within the past few years, to revive this same instrument on account of its cheapness, and the ulterior purpose of associating their names with the operation. Their efforts and so-called "modifications"—a term of license to take unpardonable liberties with other men's inventions—have attracted little or no attention.

My first studies of the nature and best means for the relief of varicocele commenced in 1857. I first published the results of my experience and observations in 1871. I gave a detailed account of my method of operating; illustrations of my instruments; the *rationale* of the operation and the results. They are too well known to need any further recital before this Association. While my report met with unusual and not unfavorable attention, it was still urged that obliteration of the veins alone afforded a radical cure. The phantasm of dangerous hæmorrhage attending the operation was dispelled on examination of my instruments and method of operating, but the cloud of "fear of lasting benefit" still remained. Gross, Agnew, Ashurst, Barton, Levis, Hammond, Hutchinson, Van Buren, Keyes, Bumstead, Taylor, Otis, Bangs, Weir, Bull, Abbe and McBurney have publicly attested their appreciation of my in-

struments and method. Still, further time was asked ere a verdict should be rendered in accordance with my appeal. I waited eleven years, until 1881. I then told, before the New York Academy of Medicine and the Academy of Surgery, of Philadelphia, of my experiences. In my account of fifteen cases recorded up to that time I had met with uniform success. The cases ranged between the ages of 19 and 45, and the operations aged between one and thirteen years. Is any further evidence essential to demonstrate that there is a limit to the elasticity of the scrotum; or the resiliency of the coats of the veins under favoring circumstances; or a lessening of the enlargement under a decrease of force and shortening of the column of blood of the spermatic vessels?

I have performed the operation fifty-nine times. In four instances hydrocele existed as a complication. They have all made radical cures as far as I can learn. I have made more than ordinary efforts to obtain information of the results up to this period. The time allotted to me will not permit of details of cases; I can only give general results. Surely cases operated upon ten or more years ago; showing now no more existence of former varicoceles, are a refutation of the objection to complete excision of the redundant scrotum for the permanent relief and cure of varicocele.

It is now generally performed, either with or without ligation of the veins, in most of the hospitals in this country. In most of the advanced works on surgery it has received recognition. Bumstead and Taylor not only admitted the value of my instruments but described my operation and advocated its adoption. Van Buren admitted to me the possibility of its becoming "the operation." Keyes, in the recent revised edition of their joint work, admits it, and speaks of my "clamp" as an "admirable one." Otis is decidedly in favor of it. Mr. H. Royes Bell, who contributed to the "International Encyclopædia of Surgery," describes the operation but, from want of knowledge of what has been done, is still fearful of the permanency of good results. In France, Edward Wickham has published an admirable brochure: "De la cure radicale du Varicocele par la résection du scrotum," dedicated to Guyon and Horteloup, in which he describes the results of the operation, and belief in the permanency of the results. He has changed somewhat the curve of my clamp, but accords me credit for my observations and operations, and the part I have taken in bringing the subject before the profession.

It is now before you, gentlemen of the Section of Surgery. I have endeavored, in the short time allotted to me, to give you the salient points of my impressions and knowledge obtained from clinical experience. I know that, should you adopt my suggestions, no lesser benefits will result from your operations than from mine.

581 Fifth Ave., New York.

MALARIA; AND THE CAUSATION OF PERIODIC FEVER.

Read in the Section on State Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY HENRY B. BAKER, M.D.,
OF LANSING, MICH.

Periodicity characterizes most and perhaps all physiological changes: The normal contraction and relaxation of muscles, and of protoplasm, the pulsation of the heart, the rhythmic respiratory movements, the periodical sleep during the night, action and repose are the rule, and this applies to thought and other nervous energy. Strongly-marked liberations of vital force occur only after a period of non-action has permitted the storing up of energy, which energy when once strongly and thoroughly discharged cannot immediately be followed by another similar discharge, for which time and opportunity for the accumulation of energy in dischargeable form is requisite.

A periodic fever has, in the fact of its periodicity, a very strong indication that it is necessarily related to periodic changes in the patient, or in those environments of the patient which influence physiological periodicity. Periodic fever is most frequently associated with those diurnal changes in the environment which are known to be associated with diurnal changes in human beings; rest and sleep during the night, and action during the day, are the rule; and periodic fevers usually recur daily or in multiples of days.

The tension of the blood-vessels is in great part controlled by nerves which have been called vaso-motor nerves; and although these may not be controlled by the will, impressions on sensory nerves, and movements started by volition are capable of influencing the vaso-motor nerves, and the calibre and tonicity of blood-vessels. In my opinion these facts have important relation to periodic fever, and especially to chills and fever; because, it is well known that chill and subsequent fever not infrequently follow impressions which are purely mental. A "nervous chill" thus caused has probably come under the notice of most observant medical practitioners. The chill which not infrequently follows childbirth is also well-known, but has other factors than mental or volitional impressions, because involuntary muscular contractions also have occurred.

The common phenomena of reaction from chill, if the chill is of considerable severity, include fever. In periodic fever—"fever and ague" (which term should be transposed, because the chill uniformly precedes the fever which is apparent) if the chill is accounted for, the fever seems to be explicable as the reaction from the chill, especially as the fever is comparatively ephemeral, it soon disappears, as it should do if reactionary only, and it only reappears after an-

other chill; that is to say each recurring fever has the same cause, that cause being the chill. If this view of the case is correct, what has to be accounted for, then, is the chill, and its periodical recurrence.

The time of day when the ague chill most frequently occurs, and the circumstances under which "nervous chills" occur, are facts which should aid our search for the essential conditions. I believe the ague chill is most frequent about noon, or not far from the warmest part of the day. My tables and diagrams show that there is also most intermittent fever in the warmest months of the year. It is generally conceded that there is most intermittent fever in the hot climates. High temperature of the atmosphere then, is the most important element in the causation of ague—intermittent fever. Whether the causation is direct or indirect is an interesting question. There are facts to be presented, further on in this paper, going to show that the influence of high temperature is, to some extent, indirect—through difference in the day and night temperatures. One alleged fact of this kind is that, in very malarious localities, exposure to the very high temperature on the low lands during the hottest part of the day does not cause the ague; but if one, thus exposed, remains on the low lands during the night, ague results, although the chill may not occur until the warmest part of the day. The great difference between the low lands and the high lands at night consists in the much lower temperature on the low lands.¹ The cold experienced at night is much the greatest on the lowlands. If the night exposure to cold has causative relation to ague, how is it to be explained? Why is it that the ague chill is not coincident with the chilling influence of the cool atmosphere?

Let us examine into the phenomena:

The ague chill comes at a time later than the experience of cold. The "nervous" chill comes after the experience of the mental or other constitutional disturbance. The chill after childbirth follows the strong muscular contractions. The chill following surgical operations is after the cessation of the extreme muscular and nervous tension. The general fact seems to be that so long as the stimulus continues unabated and the organism unexhausted the nervous chill does not occur; but it occurs after the unusual tension has ceased, or after the nervous system is exhausted. The disturbed and irregular nervous control of the body in ague chill would seem analogous to the twanging of a violin string, the tension of which has been lowered below its normal pitch. The vibrations are then irregular.

I submit tables and diagrams showing the rela-

¹ Experiments in Michigan, with registering thermometer have proved that the difference is, frequently, great.

tions of intermittent fever to atmospheric temperature.

It being apparent that whether or not there is a specific cause of ague, intermittent fever is a disturbance of the nervous system, and is, directly or indirectly, controlled by atmospheric temperature, is there ready explanation of how atmospheric temperature can control intermittent fever, irrespective of a specific cause?

But first those who think that a specific micro-organism is capable of causing periodic chill and fever may be allowed to show how it is possible for such specific cause to act periodically, or to induce periodic effects, or to cause fever or chills. It is alleged to be proved by Dr. Bernardo Schiavuzzi, in Istria, Austria, that the *bacillus malariae*, described by Drs. Klebs and Tommassi Crudeli, "is found in the atmosphere of malarial places, and more abundant the higher the temperature of the atmosphere and of the ground, and that corresponding to this the intensity of the malaria rose, meanwhile in the atmosphere of places free from fever this bacillus is not found." It is conceivable that this bacillus or some other may be inhaled, and that its products in the body may cause such an irritation or disturbance of the nervous system as we find in ague chill, and the periodical recurrence of the chill may be nearest the time of highest atmospheric temperature, because at that time the bacillus is alleged to be most abundant in the atmosphere inhaled. But this is not in accordance with the alleged fact which seems to be well attested by numerous observers, that exposure in malarious localities in the daytime is not so frequently followed by ague as exposure during the night. And, again, no one supposes that there is any bacillus or other microorganism concerned in the causation of nervous chill from mental or emotional disturbance, or of surgical chill, or of the chill following childbirth. These last-mentioned chills do not recur, but alternations of heat and cold day and night do recur, and tables of statistics which I have examined seem to prove that they are greatest in "malarious" regions, and slight in non-malarious regions, they are great in months preceding or when intermittent fever most occurs, and they are slight in months preceding or when that disease least occurs; and it would seem that in such periodical alternations of atmospheric temperature we must find sufficient cause for the production and for the periodic recurrence of ague.

HOW ATMOSPHERIC TEMPERATURE CHANGE MAY CAUSE "CHILL."

When a person is long exposed to cool night air, the abstraction of heat from the body is great, the demand for the production of heat is great.

The impression on the nervous system is strong. If one thus exposed is awake and observant, the sensations will be remembered as peculiar as well as unpleasant. If the air is not cold enough to induce immediate reaction, there is a gradually increasing nervous tension until, if the exposure is long enough, shivering occurs, that is, the normally equable nervous control of the muscular system is disturbed. If the nervous system is well-nourished, and the exposure is not extreme, the reactionary relaxation of the superficial blood-vessels, which generally occurs on the subsequent exposure to warmth, is not great, especially if the warmth is applied to the extremities of the body.

Under some circumstances, the nervous tension, due to an exposure to an atmosphere cold compared with what has recently been experienced, does not soon reach that stage where shivering occurs. Perhaps the shivering occurs soonest when the sensation of the chill is more local than general, and the most intense nervous tension without shivering is caused in those cases where the attention has been least called to the nervous disturbance, because the impress of the cold has been most gradual as well as general.³

Given, a case of intense nervous tonicities (due to impress of a cool atmosphere during the night) and consequent clonic contraction of the involuntary muscular tissue of the integument, what may occur on the experience of the day atmosphere, in warm weather? If the strong contractions on the surfaces of the body continue, and the production of heat goes on at the same rate, the heat-loss will be greatly lessened, and this will be beneficial so long as the temperature of the body remains not above the normal; but if after a time the temperature of the air inhaled becomes much warmer, the heat-loss through respiration is, consequently, much less, the internal body temperature may then become abnormally high, as is the case, I believe, in the cold stage of ague. The abnormally high internal temperature and the disturbed nervous control cause irregular muscular contractions, and the other subjective and objective phenomena of the chill; and, as is well known, these disturbances may be intensified on exposing the back of a person in this condition to the sun. The high temperature is caused (as I believe) by the continued tonicities of the muscular system of the integument, which does so much to regulate the heat-loss of the body, and which, under the circumstances I have described, has been greatly stimulated in such a gradual manner that immediate reaction did not occur; but when the reaction does finally occur, it is excessive and exhibits that heat of the surface which is recognized, by even non-professional persons, as "fever." The relaxation of the surfaces, brought

²"Concerning Malaria in general, and particularly in Istria." *Wiener Medizinische Presse*, 1887, No. 52, page 1779-80.
³Also letter, to the author of this paper, from Prof. Conrad Tommassi Crudeli, submitted to this meeting herewith.

³See diagram and text relative to conditions in India.

about by this reaction, then proceeds until its maximum is reached in the sweating stage.

Thus we have, according to my view, a clear grasp of the manner in which a first paroxysm of ague is caused by exposure to changes in atmospheric temperature. Given such alternations in atmospheric temperature as will cause a first paroxysm of ague, the chances are greatly in favor of there being similar alternations on the day succeeding, or, if not on that day, in a day or two afterwards, especially if it chances to be at that season of the year when the difference between the day and night temperature tends to continue uniform; and the repetition of those conditions which caused the first paroxysm should cause a second, and a third, and so on continually so long as the cause is repeated until death, or until the nervous system, which controls the surfaces, gains such sensitiveness to those insidious changes in the atmospheric temperature that normal or appropriate reaction promptly occurs on the experience of exposure to such insidious changes.

This view explains why it is that quinine, strychnine, and those agents which have such influence on the tonicity of the muscles, voluntary and involuntary, especially those which like quinine, have strong influence on the involuntary muscular system, have such influence over ague. Strychnine, as is well-known, renders the nervous system particularly sensitive to external impressions; but its effects, in medicinal doses, are perhaps not so lasting as are those of quinine.

It is a common observation that persons who travel northward, or to a colder climate, where ague is comparatively rare, not infrequently have one or more paroxysms of chills and fever soon after the change.⁴ The common explanation is that they brought the disease with them in their systems. But this is not philosophic, because so long as they were at the South, to the temperature changes of which locality they were acclimated, they had no ague. The true explanation is that they were not acclimated to the temperature changes in the cooler region; the contractions of the surfaces, due to the tonic effects of the cooler climate, did not readily permit of the loss of any unusual body heat, such as would result from muscular exertions; the nervous centres suffered, and chill and fever resulted.

That persons not acclimated to a warm climate suffer from ague, is a still more well-known fact. It seems difficult to account for this by any other theory than the one which I am advocating; and by this theory it seems perfectly plain, because, in warm climates the daily fluctuations of temperature are so much greater than they are in temperate or cool climates; the demands upon

the heat-regulating nervous system are therefore correspondingly greater.

BLOOD CHANGES IN AGUE.

The evidence relative to the excessive formation of pigment by disintegration of the red blood-corpuscles, through internal congestions and the greatly varying constitution of the blood serum as regards water and salts, because of the excessive thirst and perspiration in ague, seems to have been omitted from this paper; but this reference to it may serve to suggest that, in the opinion of the writer, the evidence is in harmony with the other portions of this paper.

DAILY RANGE OF ATMOSPHERIC TEMPERATURE DETERMINES INTERMITTENT FEVER.

From time to time I have published⁵ evidence tending to prove that the prevalence of intermittent fever throughout the world is in proportion to the difference between the day and night temperature—the average daily range of temperature to which people are exposed.⁶

With this paper I submit tables and diagrams proving, as I think, that so far as relates to certain parts of the world, this general law is correct. It is true in Michigan. It is true of that part of this country occupied by the U. S. Armies during the late war of 1861-5. The tables and diagrams sustaining this last statement include a study of the months of occurrence of over half a million cases (542,009) of intermittent fever, a number so vast that even though only three years' time is covered there is extremely great probability that true averages have been reached. If you will study the diagram (No. 1.) you will see that the curve representing the cases of intermittent fever follows with great uniformity the curve for average daily range of atmospheric temperature. It follows it in such a manner as to demonstrate, I think, that there is a necessary relation; and taken in connection with what we know of the regulation of body temperature by nerves which are in necessary relation to, and which normally respond to changes in the atmospheric temperature, the diagram seems to demonstrate a relation of cause and effect between daily range of temperature and intermittent fever.

By the diagram it will be seen that so long as the daily range is increasing the number of cases under observation accumulate, perhaps because

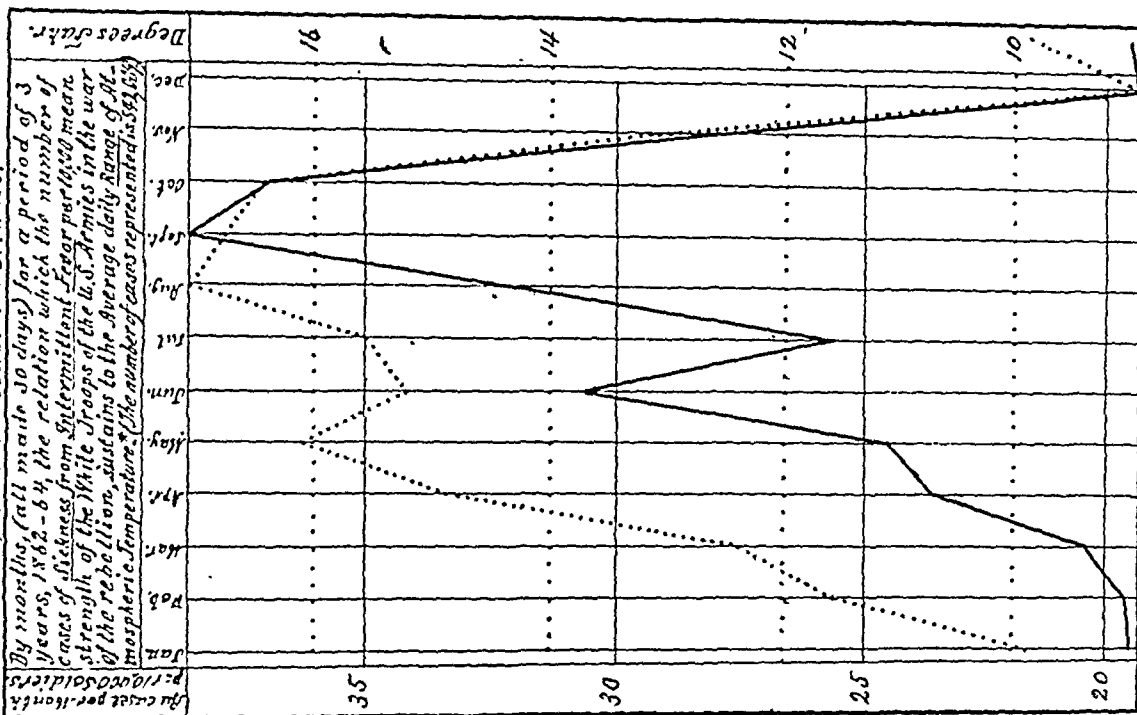
⁵ Reports of Michigan State Board of Health, especially for that of 1880, p. 318.

⁶ "It may be well to bear in mind in relation to this subject that intermittent fever is a disease of the warm season in this State, that it becomes more and more prevalent as we go south until in the extreme Southern States it is extremely common and severe, that the daily range of temperature is greatest in the warm months in this State, that it is greater in the warmer climates of the Southern States, that this is especially true on the lowlands, and that it is exposure during the day and during the night on the lowlands in the South which is believed to be so uniformly productive of chills and fever."

"If periodic chills and fever is produced or greatly favored by excessive periodic changes in the temperature of the atmosphere, then the reason is supplied why exposure on the hot lowlands during the day and return to the warm highlands at night is not so productive of ague as is exposure to the cold night-air of the lowlands." Page 318, Rep. Mich State Board of Health, 1880.

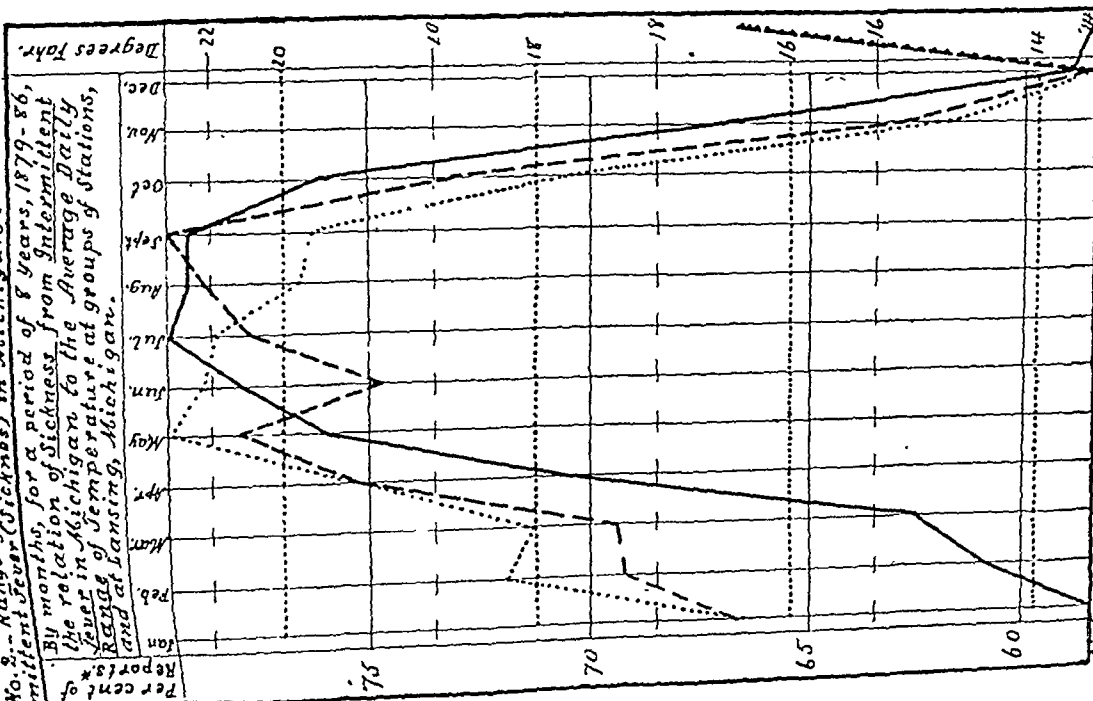
⁴ During the late war, I noticed this on a large scale after movements of troops from the South.

No. 1.—Range of Atmospheric Temperature, and Intermittent Fever (Sickness) in the United States Armies.



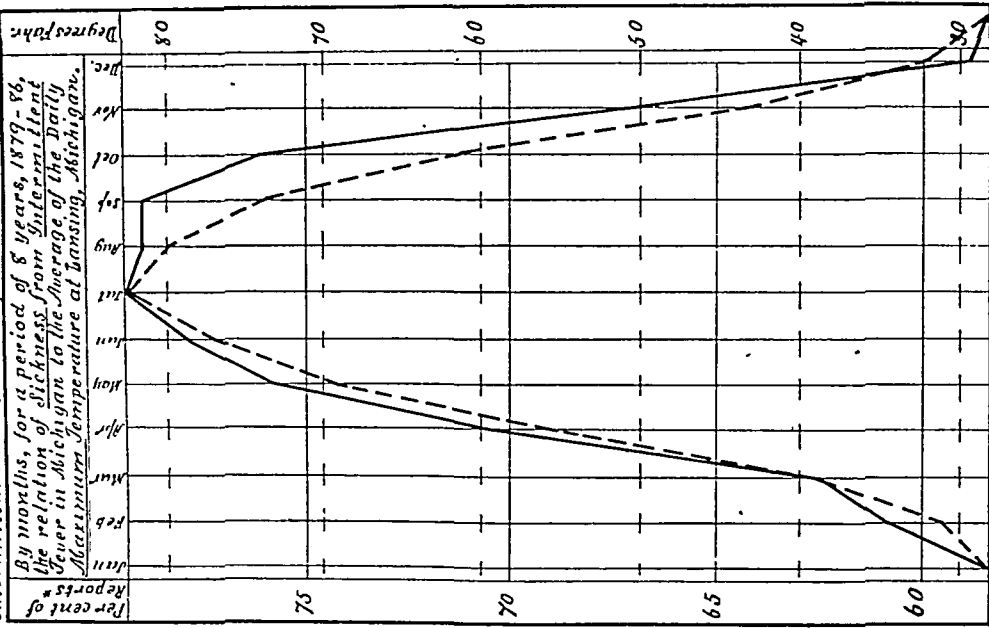
Sickness.—Average daily range of temperature. The sickness is compiled from the Medical and Surgical History of the War of the rebellion. The range of temperature is compiled from a table on page 194 of the Smithsonian Tables' Distribution and Variation of the Atmospheric Temp. in the U.S. It is for a period of 8 years, 1852-69, at Naval Observatory, Washington, D. C.

No. 2.—Range of Atmospheric Temperature, and Intermittent Fever (Sickness) in Michigan.



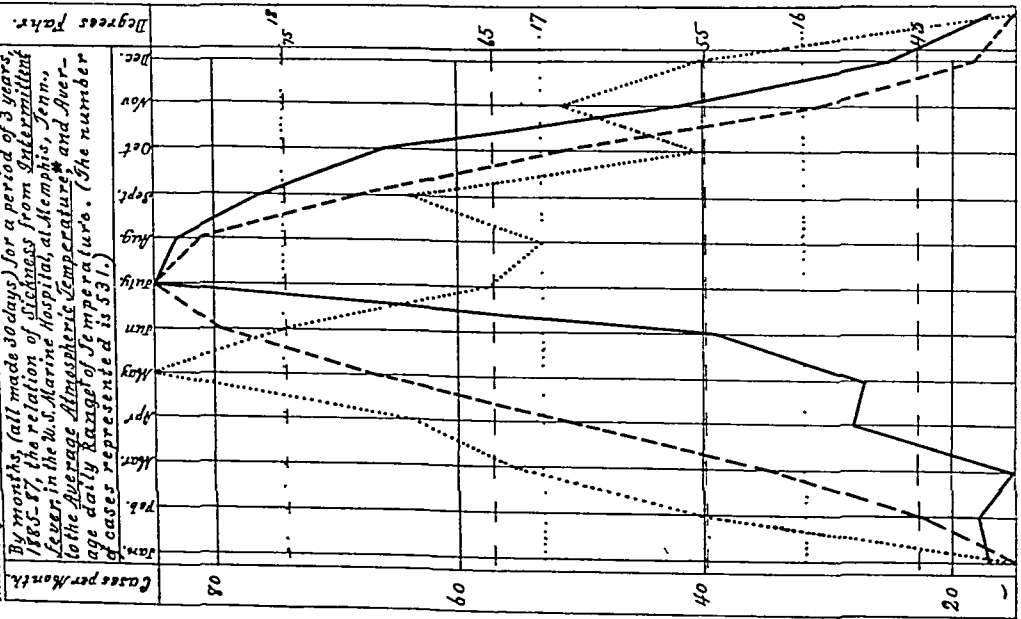
Sickness.—Average daily range of temperature. Average daily range of temperature at Lansing. *Indicating what per cent of all reports received stated the presence of Intermittent Fever then under the observation of the physicians reporting. Over 3500 weekly reports of sickness are represented in this diagram.

No. 3.—Maximum Atmospheric Temperature and Intermittent Fever (Sickness) in Michigan.



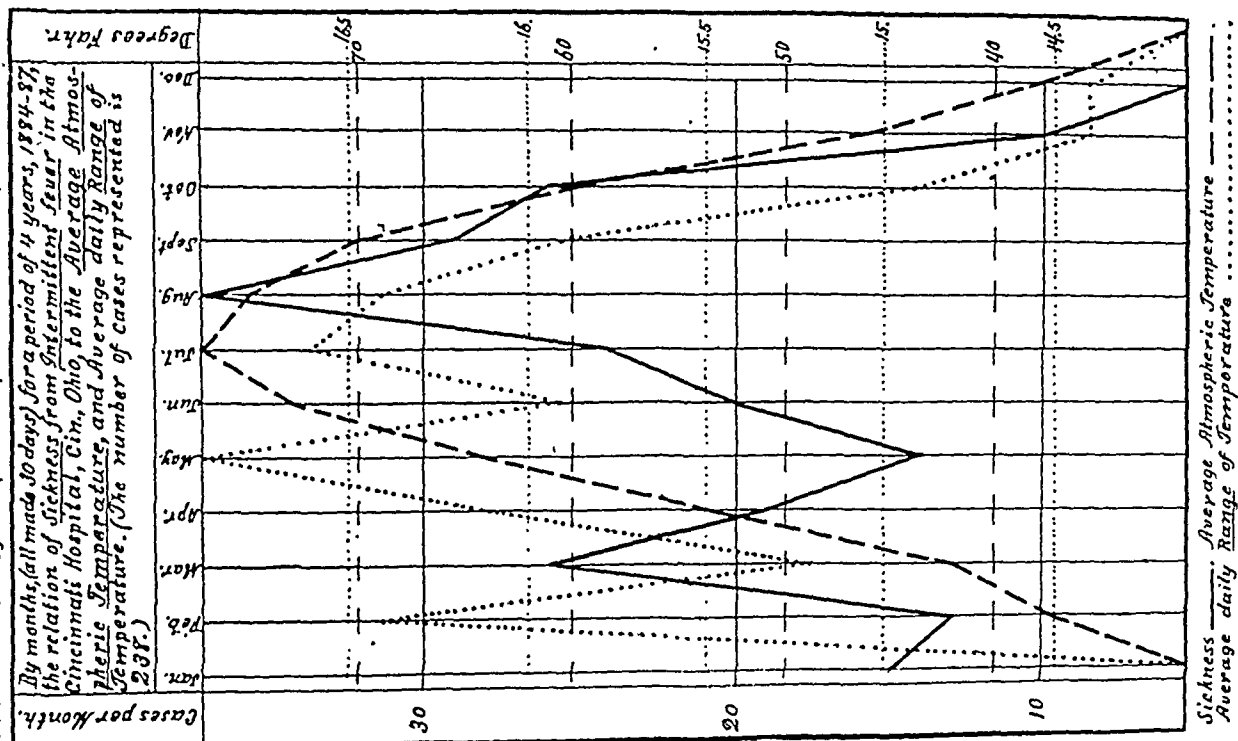
Sickness ———. Average maximum temperature ———. *Indicating what per cent of all reports received stated the presence of intermittent fever then under the observation of the physicians reporting. Over 5500 weekly reports of sickness are represented in this diagram.

No. 4.—Atmospheric Temperature, and Range of Temp. and Intermittent Fever (Sickness). Memphis, Tenn.

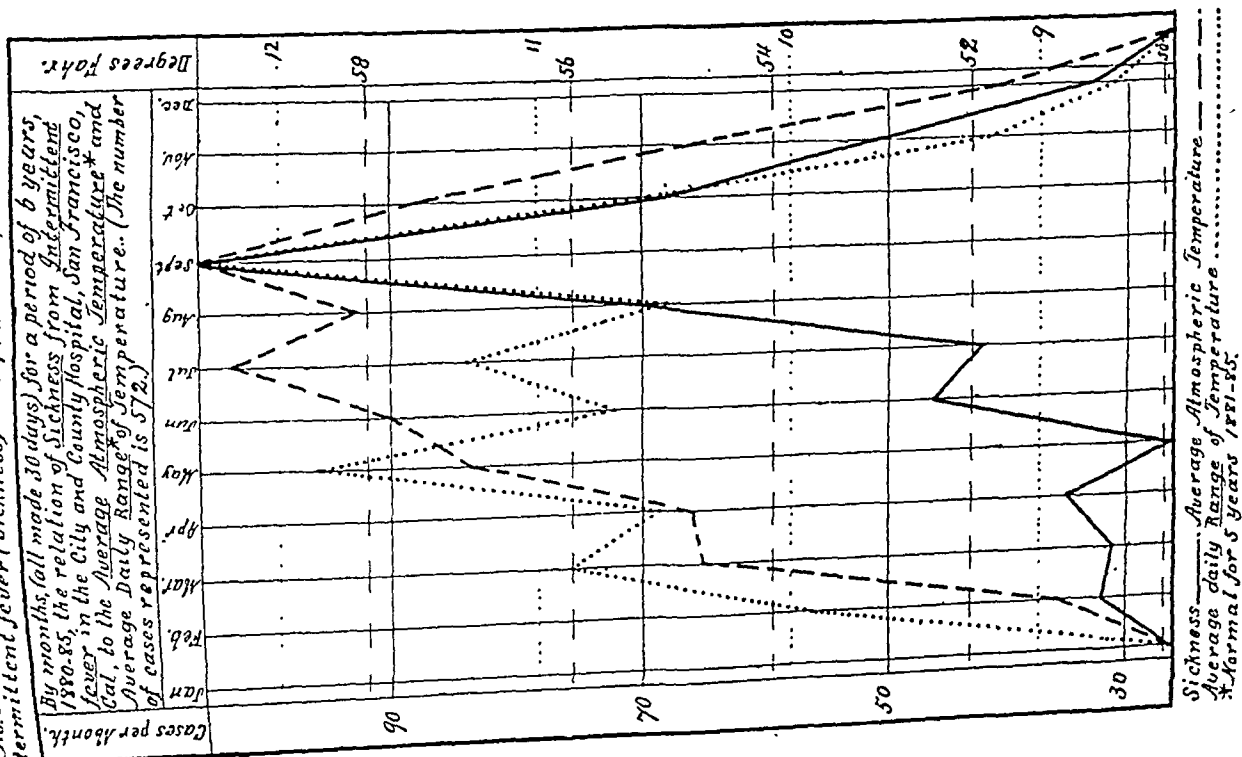


Sickness ———. Average atmospheric temperature ———. Average daily range of temperature ———. *Normal for 5 years, 1871-86.

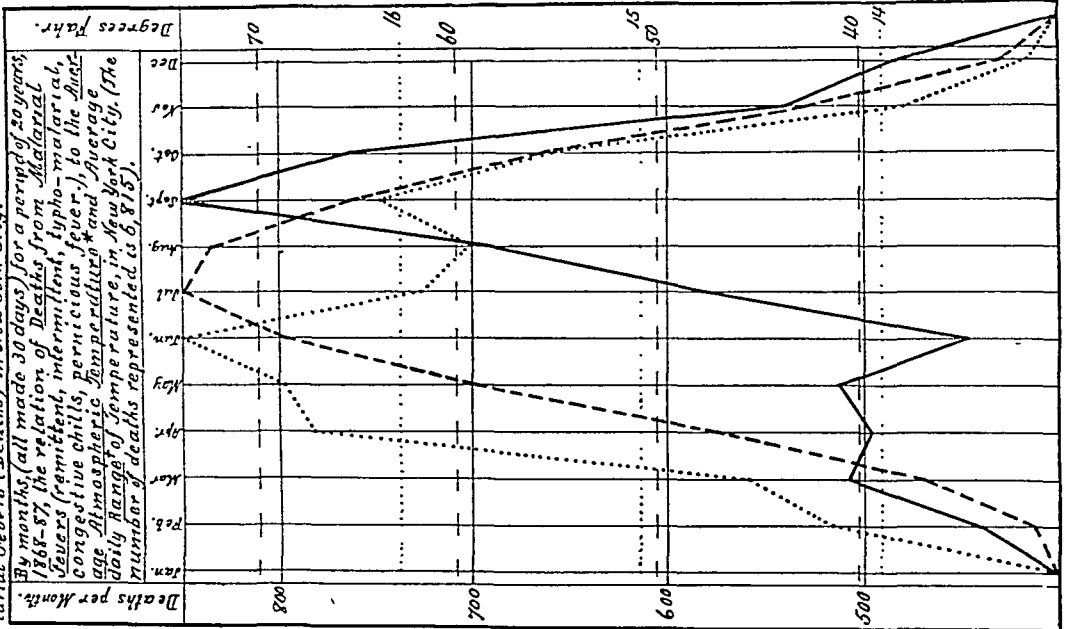
No. 5.—Atmospheric Temperature, and Range of Temp., and Intermittent fever (Sickness) Cincinnati, Ohio.



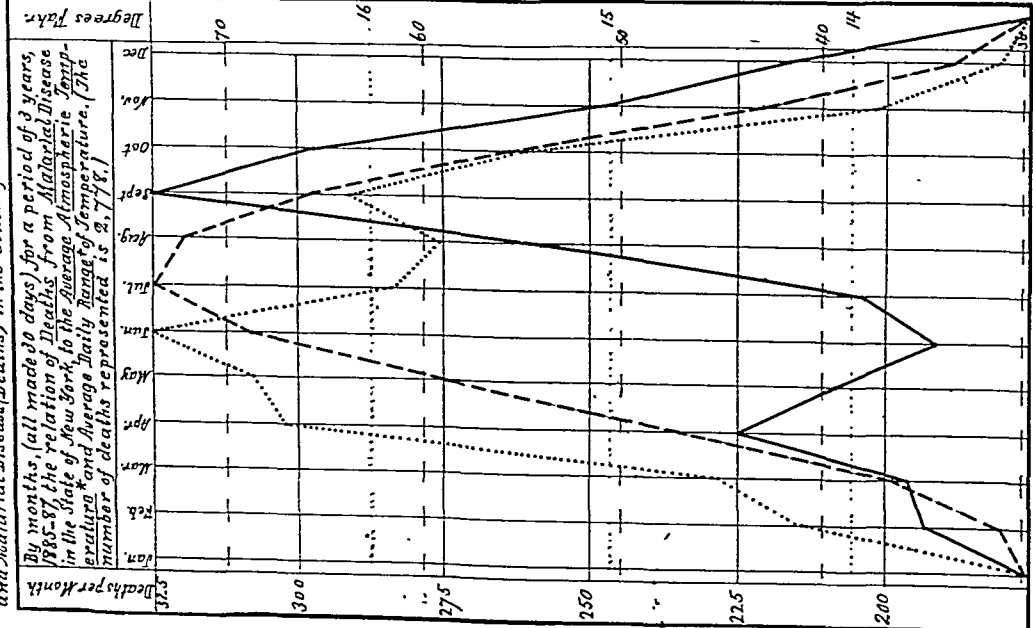
No. 6.—Atmospheric Temperature and Range of Temp. and Intermittent fever (Sickness) San Francisco, Cal.



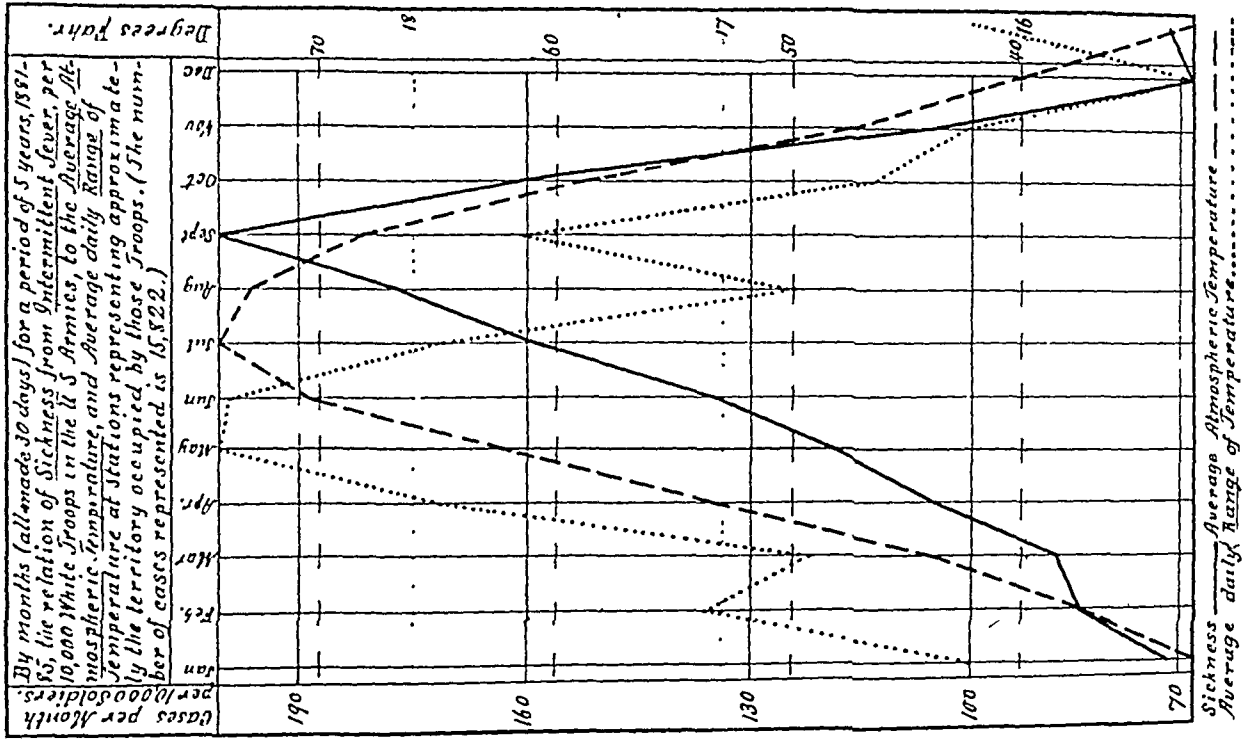
No. 7.—Atmospheric Temperature and Range of Temp. and Malarial Fevers (Deaths) in New York City.



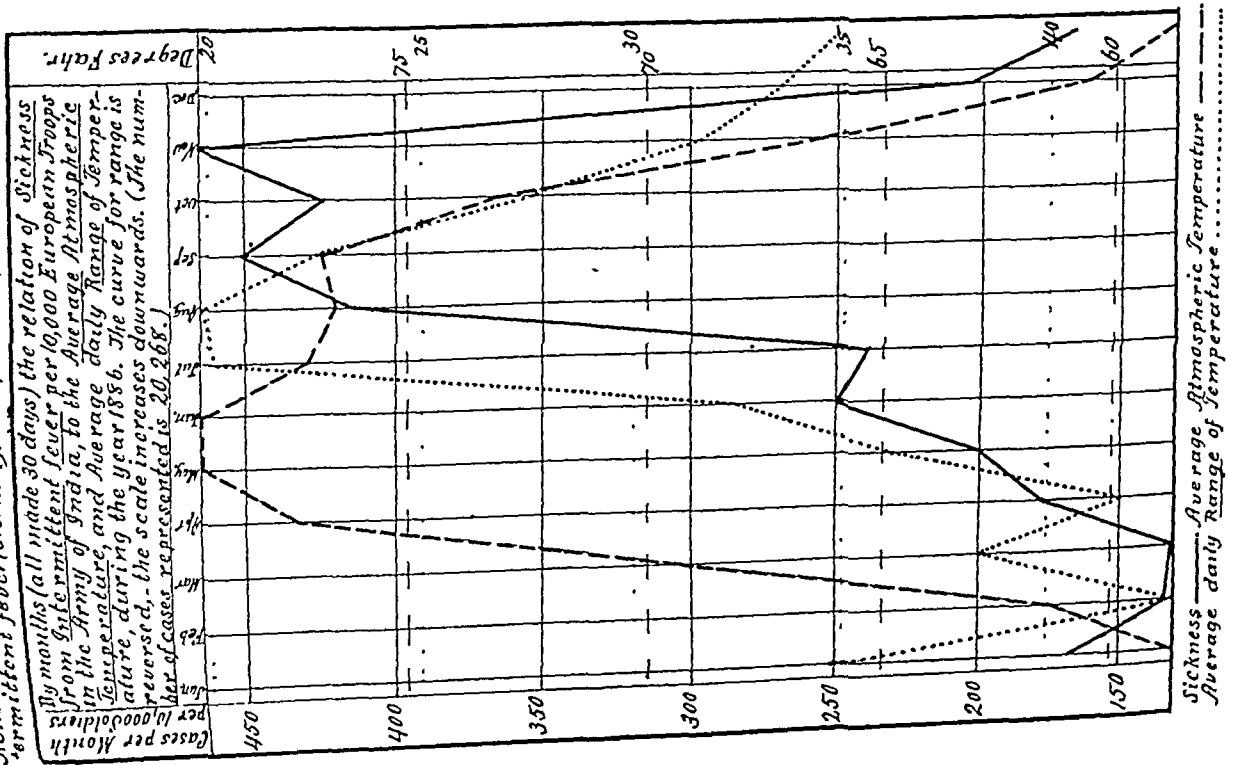
No. 8.—Atmospheric Temperature and Range of Temperature and Malarial Disease (Deaths) in the State of New York.



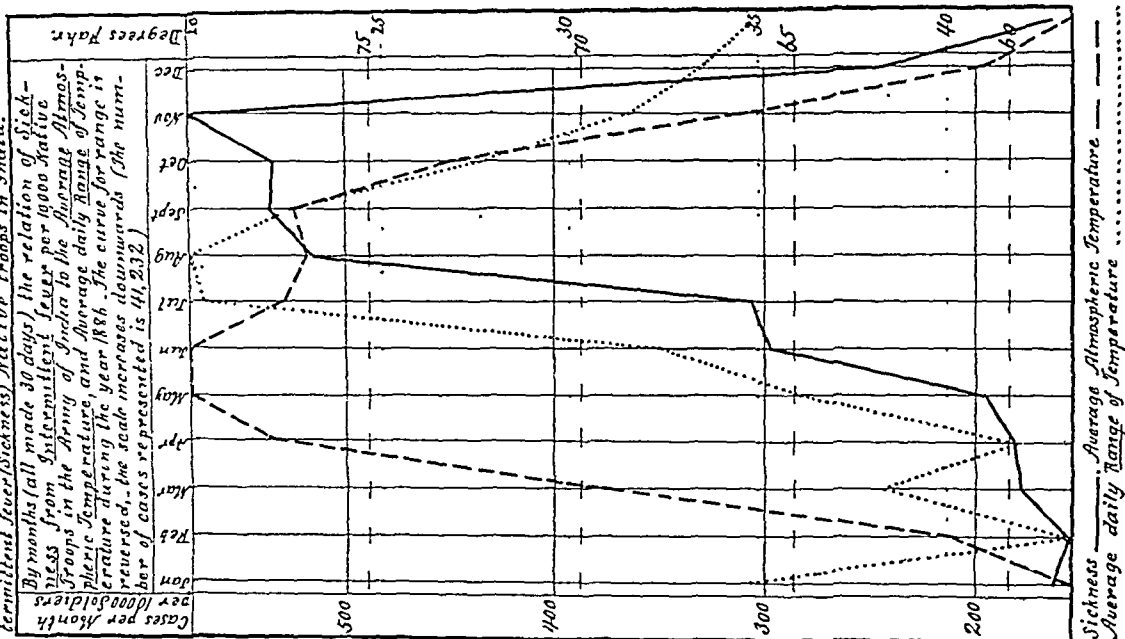
No. 9.—Atmospheric Temperature and Range of Temp. and Intermittent Fever, (Sickness) U.S. Armies, 1881-5.



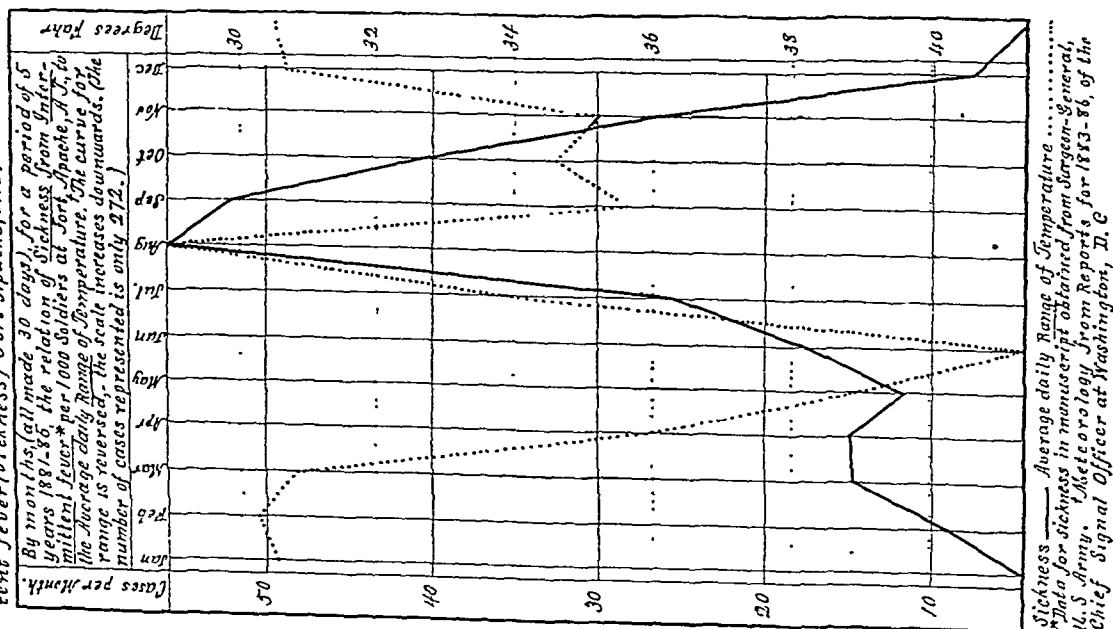
No. 10.—Atmospheric Temperature and Range of Temp. and Intermittent Fever (Sickness) European Troops in India.



No 11.—Atmospheric Temperature and Range of Temp. and Intermittent Fever (Sickness) Native troops in India.



No 12.—Range of Atmospheric Temperature, and Intermittent Fever (Sickness) Fort Spache, N. T.



TABLES FROM WHICH THE ACCOMPANYING DIAGRAMS WERE DRAWN.¹

No. 1.—Range of Atmospheric Temperature, and Intermittent Fever (sickness) in the United States Armies.

	Jan.	Feb.	Mar.	April	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Intermittent Fever.	19.4	19.6	20.4	23.6	24.5	30.6	25.6	32.0	38.5	36.8	28.1	19.1
Average Range of Temperature.	9.87	11.55	12.36	14.88	16.10	15.21	15.57	17.01	16.76	16.41	13.12	8.87

No. 2.—Range of Atmospheric Temperature, and Intermittent Fever (Sickness) in Michigan.

	58.4	60.8	62.5	70.4	75.8	77.8	79.5	79.0	79.0	76.1	67.0	58.8
Intermittent Fever.	16.34	18.23	18.02	19.41	20.83	20.62	20.50	19.84	19.74	17.69	14.69	13.56
Average Range of Temperature (Mich.).	17.25	18.29	18.33	20.67	21.72	20.46	21.61	22.05	22.35	19.81	15.73	13.99
Average Range of Temperature (Lansing)												

No. 3.—Maximum Atmospheric Temperature, and Intermittent Fever (sickness) in Michigan.

	58.4	60.8	62.5	70.4	75.8	77.8	79.5	79.0	79.0	76.1	67.0	58.8
Intermittent Fever.	28.2	31.1	39.1	55.7	69.2	77.0	82.3	79.9	73.5	61.3	43.3	31.9
Max. Temperature at Lansing.												

No. 4.—Atmospheric Temperature and Range of Temperature, and Intermittent Fever (sickness), Memphis, Tenn.

	17	18	15	28	27	39	85	83	76	66	42	25
Intermittent Fever.	15.2	16.4	17.1	17.5	18.5	18.0	17.2	17.0	17.5	16.4	16.9	16.4
Range of Temperature.	40.4	44.8	51.8	61.3	70.6	78.2	81.2	79.1	71.5	61.8	49.6	42.4
Mean Temperature.												

No. 5.—Atmospheric Temperature and Range of Temperature, and Intermittent Fever (sickness), Cincinnati, Ohio.

	15	13	26	19	14	20	24	37	29	26	10	5
Intermittent Fever.	14.10	16.40	15.20	16.10	16.90	15.90	16.60	16.40	15.90	14.90	14.40	14.40
Average Range of Temperature.	30.4	37.1	41.9	53.4	64.2	73.0	77.1	74.9	70.1	59.5	46.0	37.7
Mean Temperature.												

No. 6.—Atmospheric Temperature and Range of Temperature, and Intermittent Fever (sickness), San Francisco, Cal.

	26	32	31	35	26	46	42	70	105	68	51	33
Intermittent Fever.	8.44	9.92	10.86	10.52	11.84	10.68	11.28	10.48	12.30	10.54	9.22	8.70
Average Range of Temperature.	49.9	51.1	54.7	54.8	57.0	57.8	59.3	58.1	59.6	57.5	54.8	51.7
Mean Temperature.												

No. 7.—Atmospheric Temperature and Range of Temperature, and Malarial Fevers (deaths), in New York City.

	402	440	507	496	512	447	582	690	849	764	539	483
Deaths from Malarial Diseases.	13.28	14.20	14.54	16.36	16.48	16.92	15.90	15.70	16.08	15.36	13.90	13.40
Average Range of Temperature.	30.2	31.4	36.8	47.0	59.1	68.7	73.7	72.3	65.3	55.6	42.6	33.0
Mean Temperature.												

No. 8.—Atmospheric Temperature and Range of Temperature, and Malarial Diseases (deaths), in the State of New York.

	176	193	196	225	208	101	204	258	325	297	247	216
Deaths from Malarial Diseases.	13.28	14.20	14.54	16.36	16.48	16.92	15.90	15.70	16.08	15.36	13.90	13.40
Average Range of Temperature.	29.8	31.1	30.4	47.1	58.9	68.6	73.5	72.1	65.5	55.5	42.8	33.3
Mean Temperature.												

No. 9.—Atmospheric Temperature and Range of Temperature, and Intermittent Fever (sickness), U. S. Armies, 1881-5.

	71.73	84.69	88.15	104.92	118.49	135.17	158.75	176.94	200.68	161.12	105.20	67.92
Intermittent Fever.	16.18	17.05	16.72	17.92	18.61	18.59	17.92	16.77	17.64	16.51	16.20	15.40
Average Range of Temperature.	32.0	37.5	43.8	53.4	62.2	70.4	74.2	72.5	68.2	58.7	47.4	39.9
Mean Temperature.												

No. 10.—Atmospheric Temperature and Range of Temperature, and Intermittent Fever (sickness), European troops in India.

	168	132	130	178	200	250	238	414	451	424	468	204
Intermittent Fever.	34.8	43.2	38.4	41.9	36.2	32.4	20.2	19.8	22.6	27.7	31.6	33.5
Average Range of Temperature.	58.6	61.4	69.3	77.3	79.2	79.2	77.0	76.5	76.8	73.1	66.3	60.6
Mean Temperature.												

No. 11.—Atmospheric Temperature and Range of Temperature, and Intermittent Fever (sickness), Native troops in India.

	163	156	178	181	195	297	307	517	537	535	573	244
Intermittent Fever.	34.8	43.2	38.4	41.9	36.2	32.4	20.2	19.8	22.6	27.7	31.6	33.5
Average Range of Temperature.	58.6	61.4	69.3	77.3	79.2	79.2	77.0	76.5	76.8	73.1	66.3	60.6
Mean Temperature.												

No. 12.—Range of Atmospheric Temperature, and Intermittent Fever (sickness), Fort Apache, A. T.

	4.62	9.02	14.77	14.89	11.62	17.06	25.59	56.10	52.12	40.73	26.69	7.70
Intermittent Fever.	30.56	30.30	30.86	35.94	38.94	41.34	33.84	28.96	35.64	34.64	35.22	30.70
Average Range of Temperature.												

¹ More complete headings, and details of the extent and sources of the facts included in these Tables, are given in the diagrams, Nos. 1 to 12, which graphically exhibit the facts which are numerically stated in these Tables.

those made sick are kept sick by still more unfavorable temperature ranges; to such an extent is this true that the greatest effect of the unfavorable range seems to extend to the month following the change in atmospheric temperature range. But, on the other hand, when the change in the range of atmospheric temperature is in the opposite direction—toward lessened range—a condition favorable to freedom from intermittent fever, then, at least after the first such month, the fever falls nearly with the decrease in the range; probably because under the atmospheric condition which does not tend to

cause the chills and fever, those who contracted the disease under the less favorable conditions tend rapidly to recover under the more favorable condition, so there is little or no accumulation of cases.

The evidence in the table and diagram relating to the intermittent fever in the U. S. Armies during the late war I consider very powerful, representing as they do so many cases among persons more than usually exposed to out-door conditions. Then, too, the statistics are of cases of sickness which must be considered to have a close relation

to causative conditions, perhaps closer than would be the deaths.

RANGE OF TEMPERATURE SOMETIMES HAS
DIRECT, SOMETIMES INDIRECT RELATION
TO INTERMITTENT FEVER.

Although there is demonstrated to be a direct close relation between the daily range of atmospheric temperature and intermittent fever in Michigan, and in that part of this country in which the U. S. Armies were during the years 1862, 3 and 4, a study of the subject in other parts of this country and in other countries where the average daily range of atmospheric temperature is either greater or less than it is in Michigan, seems to prove that in such parts of the world the relationship is reversed.

The strongest evidence on this part of the subject that I have found is that shown in the tables and diagrams relating to range of temperature and sickness from intermittent fever in the European and native troops in the armies in India, (Diagrams Nos. 10 and 11) representing, respectively, 20,268 and 41,232 cases of intermittent fever which occurred during a single year, 1886. In the diagram (No. 10) relating to the European troops, the curve representing the range of temperature is drawn as if the relation were direct, but it is evident that it is not direct, yet that it sustained a well-marked relationship, inversely. [The diagram has been re-drawn, reversing the curve for range of temperature.]

That it is not the average *temperature* alone that controls the fever is shown by the fact that in many of the diagrams the curve for the fever has variations for which there are no corresponding variations in the curve for temperature; but there are variations somewhat similar, although sometimes reversed, in the curve representing the *range* of temperature.

In the diagram (No. 11) relating to the native troops, the curve for *range* of temperature is drawn so that the scale increases downwards, and the diagram shows somewhat close inverse relationship between the range of temperature and the intermittent fever. In this diagram, also, there are variations in the curve representing fever which are not accounted for by the curve for *temperature*, and are better accounted for by reference to the curve for *range* of temperature. That in both European and native troops the fever continued to prevail until November, notwithstanding the changes in both temperature and range of temperature had occurred three to five months earlier, may possibly be accounted for by the accumulation of cases, in connection with the fact that the temperature had commenced its downward movement so that there was increasing exposure to temperatures comparatively low.

HOW DO THE EVIDENCES HARMONIZE?

Taking the evidence as it stands it is strong to

the effect that in Michigan and the U. S. Armies the intermittent fever is quantitatively related to the daily range of atmospheric temperature, the *greater* the range the more intermittent fever; and that in India the fever is quantitatively related to the daily range of temperature, the *less* the range the more intermittent fever. I believe there is evidence of a similar reversal of relationship in some parts of this country, where the average daily range of temperature is very great or very little; although the statistics for such places do not cover a very great number of cases of sickness.

In another part of this paper there is an attempt to learn the conditions which tend most strongly toward the production of such a clonic spasm of the contractile fibres in the integument that loss of body heat is prevented, and the spasm or contraction does not yield until after a higher than normal internal body temperature has resulted. In that part of this paper, the conclusion is reached that the impress which most certainly tends to produce this condition of the body is the very insidious yet considerable cooling of the surface of the body generally; that sudden great changes in temperature (such as occurs in winter when one goes from a warm room directly into an atmosphere at the temperature of zero), are generally reacted against at once, and are not only recognized by the senses, but are unconsciously guarded against, and especially attract attention if confined to a particular small portion of the body. One method of resuscitating persons lacking in nervous control is to submit them to rapid changes in temperature by the alternate application of hot and cold water, or by other similar means to bring about immediate reaction.⁷

In physics, I believe the law is that "action and reaction are equal and opposite;" but whether or not the motion resulting from an action shall continue in the same direction, or be reversed in direction, depends upon the amount of resistance to its continuance, and upon the suddenness of the impact. An insidious change in atmospheric temperature which cools and constricts the surface of the body does not, so often as does a sudden change, meet with that resistance or proper response by the nervous system which is requisite in order that the normal regulation of the body temperature shall be brought about immediately.

If the proper reaction to cold is immediate it is useful; but when the reaction comes only after the conditions have so far changed that, instead of there being cold to react against, heat is being applied, then the result is a body temperature abnormally high, in which case, so long as the sur-

⁷ In the experience of sudden changes, the system has an impress analogous to that given the billiard ball, struck by the cue, when a "draw" ball is played; while in the experience of the insidious change the system has an impress analogous to that given the ball when a "follow" ball is played, in which case the impress continues after the ball has struck another, in spite of the opposing force which, under the condition first named, served to reverse the direction of the motion.

face of the body is cool and purple, we may have those sensations and appearances which are called chill; but as soon as the reaction is established, there is that higher than normal external as well as internal body temperature which has long been known as fever.

If we have reached the correct explanation of the mechanism of intermittent fever, we have explained why it is that in those parts of the world where the daily changes of atmospheric temperature are usually *very great*, the body is acclimated to and is best able to react against those changes which are most pronounced, and least likely to react against those changes which are most insidious. In India, then, and at Fort Apache, Arizona Ter., where the average daily range of atmospheric temperature is excessive, the intermittent fever should be inversely proportional to the average daily range of atmospheric temperature. These statistics seem to prove that this is so.

On the other hand, in those parts of the world where a majority of the daily changes in temperature are comparatively insidious, but where the inhabitants are so "toned up" that intermittent fever is not so often experienced, the greater the extent of the daily change in atmospheric temperature the greater the chance of causing intermittent fever, through unusual demands upon the heat-regulating nerves. In Michigan and those other temperate parts of the United States where those conditions prevail, the intermittent fever should be directly and quantitatively proportional to the average daily range of the atmospheric temperature. These statistics seem to prove that this is so.

In a few of the tables and diagrams which I have studied, there seems to be evidence that where the average daily range of atmospheric temperature is excessively small, the effect on the fever is uncertain.

In a few of the tables and diagrams there seems to be shown a direct relationship of range of atmospheric temperature to intermittent fever in all the months in which the average range is below about 16°, while in months when the range is above that, the relationship seems to be reversed; but even in such cases there is apparently good evidence that range of atmospheric temperature has influence.

In nearly all the instances studied, it is apparent that intermittent fever is more closely related to daily *range* of temperature than to the *average* temperature. It follows, therefore, that if the bacteria in the atmosphere alleged to cause the fever increase, as stated by Dr. B. Schiavuzzi, in proportion to the temperature of the *atmosphere*, then the experience of range of atmospheric temperature is a stronger controlling factor than is the bacillus malarie in the causation of intermittent fever.

If, however, the bacillus malarie is capable of

causing the fever, and it is in the atmosphere in proportion to the temperature of the *earth* (as also is alleged by Dr. Schiavuzzi), then we must await further evidence, because we have not yet sufficient statistics of the proportional prevalence of the bacillus in each month of the year at a sufficient number of parts of the world, nor sufficient collected and tabulated data of the temperature of the earth in different parts of the world, to answer the question.

SUMMARY.

So far as evidence is yet presented, it seems to be proved, then, that:

1. Intermittent fever is proportional, directly or inversely, to the average daily *range* of atmospheric temperature.

2. The *controlling* cause of intermittent fever is exposure to insidious changes, or changes to which one is unaccustomed, in the atmospheric temperature.

3. In the mechanism of the causation of intermittent fever, the chief factor is the delay in the reaction from exposure to cool air; this delay, extending to a time when greater heat-loss should occur, results in the abnormal accumulation of heat in the interior of the body, and in disturbed nervous action—the chill; and the final reaction is excessive, because of the accumulation of heat and, sometimes, because it occurs at the warmest part of the day.

4. The fever is the excessive reaction from the insidious influence of the exposure to cool air; and it is periodical because of the periodicity of nervous action, and because the *exposure* and the consequent chill are periodical, owing to the nightly absence of the warmth from the sun.

5. Residence in valleys or on low lands through which or upon which cold air flows at night and thus causes insidious changes in the atmospheric temperature, favors intermittent fever.

6. In our climate, those measures, such as drainage, which enable the soil to retain warmth during the night, and thus reduce the daily range of temperature immediately over such soil, tend to decrease intermittent fever among residents thereon.

7. In the cure and prophylaxis of intermittent fever, those remedies are useful which lessen torpidity and tend to increase the power of the body to react promptly to insidious changes in atmospheric temperature.

8. The slowness of the pulse, and other indications of torpidity, associated with retention of bile or with certain disturbances of the functions of the liver, are well known; but, so far as known to the writer, these conditions have not heretofore been considered as causative of the fever in the manner herein suggested.

DISCUSSION ON DR. BAKER'S PAPER.

DR. H. A. JOHNSON, of Chicago: While it is true that the existence of parasites in the blood of

malarial patients is demonstrable, is it a justifiable inference that they cause the disease? The existence of cottonwood trees along our prairie streams do not cause the presence of the water. One of the strongest objections to the so-called hematozoon of malaria being the cause of the disease is that they cannot be cultivated. They exist in the blood plasma, principally in the corpuscles. Can it be demonstrated, 1st, that it is a heterologous form; 2d, that it is not found in any other disease than malaria. These organisms are polymorphous, amœboid. Now one of the results of the malarial form of fever is the multiplication of the white blood corpuscles. Are not these hematozoa a genesis of white blood corpuscles?

DR. W. L. SCHENCK, of Kansas: The widespread presence of periodical fevers, and especially of the so-called malarial diseases, makes the study of the various forms a matter of great importance. In old times malaria was supposed to be the potent cause of the disease. What was malaria? It escaped the microscopist and the chemist. But now it is thought we have found the cause in a bacillus. Dr. Baker's paper showed that there are other causes to be considered. I would refer to papers of my own, published by the State Medical Society, which while not elaborated as Dr. Baker's, go to support this atmospheric theory. We do not think that the frogs and mosquitoes which occur in malarial localities cause the fever, therefore why believe bacteria or hematozoa, which alike have their habitat in swampy regions, are the cause of remittent fevers. Where heat and cold cause engorgement of the organs we find the disease occurs. If all exposed wore proper clothing, protecting them against the chill of the night, the disease might be less prevalent. Heat associated with moisture enervates, and alternating cold produces central action and congestion of organs, thus causing malarial fever.

I had an example in my family. My children, during a warm summer, slept in a door-way, a draught blowing over them. In five days they had malarial fever, yet no other member of the family nor no one in the neighborhood was so affected.

I believe the efficacy of quinia in this disease is its influence in producing disgorgement of the central organs, and stimulating their tonicity prevents reëngorgement.

DR. SHARP, of Mo.: I think the physical and chemical forces have been canvassed as far back as the time of Daniel Drake. He considered it was caused by an animalcule, not from microscopical study, but from the study of the disease. Nothing but a living organism will elaborate chemical compounds. Our bodies are only destroyed by living organisms. I am not yet prepared to accept the doctrine of living organisms as the cause of disease. Living in a malarial re-

gion, it soon becomes apparent to one that exposure in the early morning or evening causes the fever. From this experience alone strong support may be given to the theory advanced by Dr. Baker.

DR. LEE, of Pa.: I think Dr. Baker's paper the strongest and most ingenious argument in favor of a theory which has always seemed to me weak and inconclusive, that I have ever heard. The whole aspect of a malarial chill is that of an organism striving under a living poison. First, the powerful contraction of the blood-vessels under the influence of the vaso-motor system, causing the chill, indicates the presence of the poison and the impression it is making on the nervous system. Second, the febrile rise indicates the reaction from the poison. Third, there is the elimination from the emunctories of the noxious or effete material. The theory of heat and cold is quite inadequate to account for the periodicity of malarial fever. Cholera is similar in its phenomena, but the system does not always react as quickly from the stage of depression, hence the fatal issue. In our Western States we have a condition analogous to cholera in the congestive chill.

If heat and cold are the causes of ague we should have quotidian chill. Yet we know the latter are not the most frequent form; there is nearly always an interval making the chill tertian or quartan. It does not yet seem clearly proved how heat and cold cause malaria.

If we suppose the presence in the blood of an organism which has a certain life history and arrives at maturity in a certain number of hours we may have a rational explanation of the cause and effect of malaria.

Changes of heat and cold, we know, are as frequent in winter as in summer, therefore—if this theory were true—we ought to have the disease prevalent in winter as well as in summer.

MULLEIN IN THE TREATMENT OF MALARIAL TROUBLES.

Read in the Section on Practical Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY GEORGE BYRD HARRISON, M.D.,
OF WASHINGTON, D. C.

This brief paper is intended to draw attention to the remarkable results obtained, in certain sections of the South, during the war between the States, in the treatment of malarial fevers, by means of a very common and homely plant, mullein; (*verbascum thapsus* of Linnaeus). Perhaps it is wrong to speak of it as a "homely" plant, because it seems that all of its family seen in this country, (some three varieties), have been imported from Europe. "Familiar," would give

a better description. Although not an adult, during the earlier years of the revolution, I was old enough to note the signal effects of this herb as used in the treatment of malarial troubles. Quinine amongst us in those days was a luxury which few could command. My temporary home was upon the Upper James River, in Virginia, in a neighborhood in which chill and fever was anything but a rarity. Mullein was the resource under these circumstances, and proved to be by no means "a broken reed." I will try and give evidence of this, by direct testimony other than my own, later in my paper; regretting that, (owing to the state of things, then existing), it is not medical testimony, strictly speaking. I have selected this subject because our dispensatories, while placing verbascum quite conspicuously in their secondary list, and according to it a catalogue of virtues, are singularly silent as to its antimalarial properties. Wood, Bartholow, and Lauder Brunton ignore the vegetable, altogether, in their treatises upon *Materia Medica*.

Francis Peyre Porcher, in his well-known work, "Resources of the Southern Fields and Forests," says (Edition, 1869), "Of the order scrofulariaceæ (fig-wort-tribe), generally acrid and bitterish, sometimes dangerous in their properties; is mullein, (*verbascum thapsus*-walt) diffused; grows in pastures upper and lower districts, flowers in July" (a number of references given here); "The leaves of the flowers contain a narcotic principle. A decoction of the flowers and leaves (as tea), is beneficial in dysentery and tenesmus; it calms pain in the fundament, caused by hæmorrhoids; and it is used in the convulsions of infants; in ardor urinæ, and wherever the indication is to moderate spasm or irritation. A large quantity of the flowers will even induce sleep, so active is the narcotic principle it contains." (References given). This distinguished author then, after enumerating a number of diseases in which the plant is useful, and ascribing its value to "anodyne, emollient and gently astringent qualities," alludes to its employment in taking fish (the seeds being fed to them). I will not weary you by referring to a number of other complaints, in which he states that mullein has been found useful, but pass on to the following passage: "Equal parts of mullein leaves and the bark of the root of sassafras, boiled in water and concentrated, then mixed with powdered sassafras bark to form pills, are reputed valuable in the treatment of agues by herbalists." (See *Indian Guide to Health*). Surgeon Hinckley has reported several cases, in which the paroxysms of intermittent fever were completely prevented by the administration of the warm infusion of the fresh root; (4 ounces of the fresh root to one pint of water, reduced one-half by boiling; of which 2 ounces were given every hour, commencing four hours previous to the ex-

pected chill). (*Confederate S. Med. Journal*, January, 1864)."

My own recollection, of the efficacy of this herb, so strongly corroborates the observations of Surgeon Hinckley that I am entirely unwilling to resign it to the "herbalists." Within a few days past I have written to a lady (the wife of a Confederate officer of rank), whose practice, with mullein, was notably successful in my neighborhood, to ask her experience; and that she would give me her recipe. Her reply was prompt, and I give it to you at length:

R.—"Beat mullein leaves in an iron mortar; strain; and to the juice add an equal quantity of French brandy; in a wine-glass of this mixture put fifteen drops of spirits of camphor, and give just as the chill is coming on. The patient must be warmly covered and in bed before taking, and continue so for several hours after. Now for my experience: When I was told of it my husband had been having chills for seven years. I mean he had never been free from them more than a week or two at a time during that period. He would not consent to try this remedy, until one day, after taking 40 grains of quinine, he had a chill, which was so severe that we both feared congestion, and he said he would try anything. So after the chill had reached its height, I had the leaves gathered and beaten and gave him a dose. As soon as he swallowed it the moisture began to break out on his brow; and in five or ten minutes he was in a most profuse perspiration. He had not the least fever, and did not have another chill for fifteen years. I tried it after that, in, I suppose, fifty cases, *with perfect success*. Our physician in the neighborhood, (Dr. R. K. T.) used to laugh at me about it very much; but the last time I saw him he told me that during the war, when he could not get quinine, he had to resort to it, and found it most efficacious, not only in cases of chills, but in bilious and typhoid fevers. Of course he could not get brandy at that time, but used whisky instead, and usually, the commonest kind. I am glad to hear you are going to sing the praises of this wonderful plant."

I know very well that the carping reader or listener, as the case may be, will object to my adducing lay evidence of this sort, in a paper relating to a scientific subject. I know, too, that he will consider that the case notes detailed savor of inaccuracy and enthusiasm. Such a one, however, is ignorant of the peculiar state of things existing in the South, during the days of Slavery. In regard to the first proposition, he will have to be informed of the especial relations occupied by the cultivated wife of the large Southern planter to her husband's slaves ("servants" as we were taught to call them). This information, happily, I can give from the pen of a distinguished foreigner, the Marquis de Chastel-lux, a general officer under the Comte de

Rochambeau, in the Revolutionary War. This accomplished gentleman, after the surrender at Yorktown, made a tour of the Union and Canada; and the edition of his delightful work (from which I quote) was published in 1827, by White, Gallagher & White, No. 7 Wall Street, New York. On page 282, after describing the beauties of Westover, the old homestead of the Byrd family, on the James River, (well-known in our day as a part of McClellan's entrenched Camp), and after numerous tributes to the elegance and hospitality of his hostess, Mrs. Byrd, he says: "This lady takes great care of her negroes; makes them as happy as their situation will admit, and serves them herself as a doctor in time of sickness. She has even herself made some interesting discoveries in the disorders incident to them, and discovered a very salutary method of treating a sort of putrid fever which carries them off commonly in a few days, and against which the physicians of the country have exerted themselves without success." In reference to the case detailed, in the letter quoted, in which chronic malaria was gotten rid of by one treatment, astonishing as the result was, I can testify to a similar instance in my father's household, in which quinine had failed, and a successful result was obtained by the use of this lady's mullein-juice preparation.

Undoubtedly our Pharmacopœia is already over freighted with drugs and remedies, many of them inert or unnecessary. But in calling attention to this one, I am not introducing a new title. The plant is already "on the list." No one has greater faith than I in the virtues of cinchona and the salts of its alkaloids, especially quinine and cinchonidia, but, unfortunately, we are now and then compelled to refrain from their use by reason of personal idiosyncrasy. One man is known to me, in whom such alarming hæmaturia occurs after one dose of quinine that he cannot be induced to take it. I have known this symptom to follow a dose clandestinely given by his physician, who doubted the alleged effect. We are all accustomed to see troublesome rashes resulting from quinine and other agents of its series, as well as nervous phenomena, in some patients, which positively inhibit their employment. In the case of a very prominent gentleman, who recently died in this city and who suffered from congestive malaria, his physician gave quinine, perfectly assured from previous knowledge of the idiosyncrasy of his patient, that the nails would be shed. He told me that the result was as anticipated, nails dropping out, and skin desquamating. Arsenic stands us in good stead as a substitute in chronic cases; and Warburg's tincture is popular, with some practitioners, in acute cases. Gelsemium and other resorts we undoubtedly have; but I am sure that an antiperiodic possessing the value which I am confident pertains to this drug, would be gladly welcomed by one and

all of us—and I should feel much gratified if our enterprising manufacturing pharmacists should be led to develop its active principles, so as to offer us a convenient form of administration.
1345 F St., N. W.

A CASE OF TRANSVERSE LACERATION OF THE CERVIX UTERI.

*Read before the Medical Society of the District of Columbia,
May 16, 1888.*

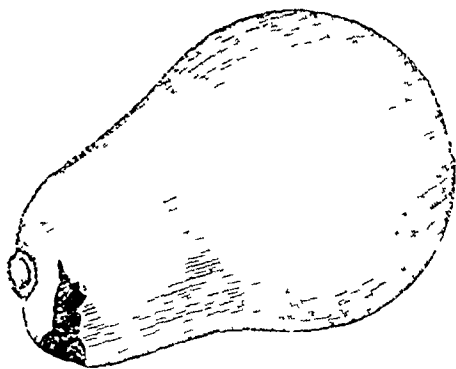
BY THOMAS C. SMITH, M.D.,
OF WASHINGTON, D. C.

On May 2, 1888, I was called to see Mrs. R., colored, 23 years of age, who was seven and a half months advanced in her first pregnancy. Early in the morning she was startled by a sudden gush of fluid from the vagina, and up to the time of my visit there had been an uninterrupted discharge unattended by pain. On making an examination, the os was found undilated, but a watery fluid was passing in small quantities. No signs of labor were manifest at the time, and the patient was directed to remain in bed.

Two days later, May 4, I received another message, and saw the woman about the middle of the day. The nurse informed me that pains came on shortly after my previous visit, and that they had steadily increased in severity, but finding that no progress was being made, she had sent for me. The woman was now having almost continuous expulsive pains, and on making an examination my finger came against the os. This was undilated, and at first I thought my finger was pressing against the anus of the child; in other words, that there was a breech presentation to deal with. But on removing my finger for a moment, and again passing it up to the uterus, I was surprised to find the vertex presenting and the supposed os dilated to a diameter of some two inches. As this apparent change had taken place in less than a minute, I proceeded to make a careful examination, and the following situation was disclosed: The natural os was discovered to be undilated so that I could scarcely pass my finger through it, while the head of the child was found to be engaged in an abnormal opening, which investigation proved to be a tear in the cervix about an inch and a half from the margin of the normal os. This laceration extended laterally about one-third of the circumference of the cervix at the point indicated, and was situated to the left and posteriorly. When the uterus contracted, the head engaged in this opening, while the normal os was absolutely unaffected by the pains.

So interesting a complication in labor induced me to invite a professional brother to make an examination, and finding Dr. J. T. Winter in the neighborhood, he was asked to see the case. After explaining the state of affairs to Dr. W., he examined the patient and satisfied himself that my

explanation was correct. As it was impossible to effect dilatation of the normal os in the presence of the laceration, and as the latter was extending, with the probability that the whole circumference of the cervix would be involved if the direction of the tear did not, indeed, change and involve the body of the uterus, I passed a probe-pointed bistoury through the laceration and out of the os, and divided the tissues so as to convert the lesion into a longitudinal laceration of the cervix. The patient experienced no pain from this procedure, which was unattended by hæmorrhage. Being apprehensive that instrumental interference might be demanded, I went to my office for my forceps, and on returning found that the child had just been born. This was separated, and the placenta delivered without trouble. The only after-treatment consisted in washing out the vagina twice daily with water which had been boiled. The woman has not had an unpleasant symptom since her delivery. A few days ago I made an examination and was hardly able to find the laceration, so well had the work of repair progressed.



Referring to lacerations of the cervix during labor, Lusk makes the following observations:

"Most commonly these lacerations follow a longitudinal direction. In rare cases, where there is extreme rigidity of the os externum, or where, after the escape of the amniotic fluid, the head distends the anterior lip without pressing upon the os, a transverse rent may occur through which the child may pass. Sometimes a longitudinal tear may be combined with one running transversely, the lip then hanging by a pedicle to the uterus, or the entire lip may be torn off. Isolated cases of so-called annular lacerations have been reported, where the transverse rent has extended through the whole vaginal portion, so that the lower segment has been detached in the form of a ring."

The foregoing quotation covers the ground admirably. In my case the os was not rigid, but failed to dilate because the uterine forces were misdirected, while the head distended the posterior lip "without pressing upon the os."

Reference to the figure will further elucidate the nature of the lesion present in the case above reported.

MEDICAL PROGRESS.

SALOL IN LUMBAR ABDOMINAL NEURALGIA.—In gouty subjects lumbar abdominal neuralgia has a considerable importance in uterine affections, and frequently persists even after the latter disease has been cured: this is especially the case in gouty subjects, and M. J. CHERON (*Rev. Méd.-Chir. des Maladies des Femmes*, July 25, 1888) recommends in such cases the employment of salol, taken internally. This remedy, according to the author, is well supported by the stomach, and exerts a favorable action on the rheumatic and neuralgic pains. He advises that the salol should be powdered, and 10 grains divided into twenty capsules, of which two to four should be taken daily before meals. In addition to this, an ointment of salol and vaseline in equal parts may be rubbed into the lumbar sacral regions.—*Therapeutic Gazette*, Oct. 15, 1888.

MENTHOL IN PRURITUS LABII.—ALEXANDER DUKE, having seen some time since in the *Journal* an interesting paragraph by Dr. Routh, Jr., on the value of peppermint water in cases of pruritus, I gave it a trial; but finding it only gave slight relief, I applied the crystalized menthol as sold by Shirley and others, for relieving neuralgic pain. The application produces some burning pain at first, but is followed by a most comfortable sense of coolness and relief, which relief I find lasts for days in some cases, and the congested color of the vulva almost altogether disappears. The menthol is applied by rubbing the surface over three or four times with the solid menthol, and I can certainly testify as to its value.—*Brit. Medical Journal*, Sept. 1, 1888.

HELLEBOREUS VIRIDIS IN CARDIAC DISEASES.—DR. CHRISTOVITCH has made a series of experiments on dogs and frogs, and has used the extract of this plant in eleven cases of heart disease. He concludes that: 1. The action of the heart is increased by it, and the fulness of the pulse augmented. 2. Morbid activity of the heart is diminished in cases of excessive cardiac action. 3. Congestions of the lungs, liver and kidneys are relieved by it. 4. The secretion of urine is increased. Christovitch uses a soluble extract.—*L'Union Méd.*, Aug. 14, 1888.

TREATMENT OF INFANTILE CONVULSIONS.—A. VEILLARD recommends the following mixture for the treatment of infantile convulsions: Tincture of musk, tincture of castorium, sulphuric ether, each 32 minims; paregoric, 8 minims. Six drops are given each hour in a teaspoonful of sugared water or a teaspoonful of milk. The intervals may be lengthened as the symptoms become moderated.—*Journal de Médecine de Paris*, August 12, 1888.

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SATURDAY, NOVEMBER 10, 1888.

AN IMPORTANT AMENDMENT TO THE CONSTITUTION OF THE ASSOCIATION.

Every thoughtful member of the American Medical Association must admit that the selection of Officers and Standing Committees, and especially of the place and time of the Annual Meetings, is a duty of great importance; and should be performed in such a manner as to secure the exercise of intelligence and deliberation. And all know that hitherto this important work has been done by the Committee on Nominations, composed of one member from each State and Territory, and from the Medical Corps of the Army, Navy, and Marine Hospital Service, all selected by the members in attendance from each State, Territory, etc., during the first twenty-four hours of the Annual Meeting, and announced by the permanent Secretary on the morning of the second day. The Committee thus selected and announced almost immediately enters upon the discharge of its important duties, and is expected to make judicious nominations for the Officers, Standing Committees, Judicial Council, Trustees for Publication of THE JOURNAL, and to recommend the place and time for holding the next Annual Meeting in a few hours, and then be discharged. No member of the Committee could know that he would be called upon to act in that capacity long enough before going into the Committee room, to enable him to examine the past records of the Association, or even its Constitution and By-laws, much less to make proper inquiries concerning the place and time that

would be most advantageous for the Association and the profession to hold its next Annual Meeting. The constant liability to make mistakes and injudicious recommendations by such a Committee has been demonstrated many times during the progress of the Association, and at no time more strikingly than at the recent annual meeting in Cincinnati. The *personnel* of the Nominating Committee selected at that meeting was equal in intelligence and business tact to that of any of the committees appointed at previous meetings, and yet it recommended for local Assistant Secretary one who, at the time, was not a member of the Association, and a *time* for the holding the next annual meeting one month before there would be any adequate hotel accommodations open for the reception of members in the city selected for the *place* of meeting, and the Association adopted the recommendations. Had the Nominating Committee been a continuous business committee, one-half of whose members were selected annually, and their work so arranged that the members who were to make the nominations and recommendations at any given annual meeting would have all the preceding year in which to make necessary inquiries and make themselves familiar with the true interests of the Association, such blunders would be wellnigh impossible. It was solely for the purpose of avoiding the evils of having the most important business interests of the Association conducted in such haste, that an able committee, after much deliberation, recommended at the meeting in 1887 the following amendment to Section V of the Constitution:

The General Committee or Council shall be composed of *two members* from each State and Territorial Medical Society entitled to representation by delegates in the Association, and from the Medical Departments of the U. S. Army, Navy, and Marine Hospital Service. They shall be chosen by the members registered and present at each annual meeting, from each State, Territory, and from the Medical Corps of the U. S. Army, Navy, and Marine Hospital Service, acting separately, on the third day of each annual meeting; each delegation reporting the names of the members chosen to the Permanent Secretary of the Association on the same day, that they may be announced by him at the opening of the morning session of the fourth day. At the first election each delegation shall choose *two members* of the General Committee, one of whom shall serve *one year* and the other *two years*, and at each annual election thereafter one member shall be

chosen to serve for two years, thus making the term of office of members of the General Committee *two* years. It shall be the duty of the General Committee, thus constituted, to organize by choosing annually a Chairman and Secretary, and such sub-committees as may be found necessary to facilitate the work that may be assigned to it; to meet annually at the place and on the day preceding each annual meeting of this Association, and as often during that week as may be necessary; to nominate, on the third day of each annual meeting, all the general officers of the Association (none of whom shall be members of its own body), the members of the Committee of Arrangements, the Committee on Necrology, seven members of the Judicial Council, and three members of the Board of Trustees for Publication for election by the Association; to recommend the place and time of holding the next annual meeting; and to consider and report upon all subjects that may be referred to it by vote of the Association. The presence of one-third of the whole number of members elected to the General Committee shall constitute a quorum for the transaction of business. If, at any annual meeting of the Association, it shall be found at the close of the general meeting of the first day that a quorum of the General Committee is not present, it shall be the duty of the President and Permanent Secretary to fill the vacancies in the Committee temporarily by selections from the lists of delegates registered as present from the States to the vacancies belong.

Should this provision be adopted by the Association, the Permanent Secretary should be authorized to substitute the name "General Committee" for "*Nominating Committee*" wherever the latter occurs in other parts of the Constitution and By-laws.

When this amendment was submitted to the meeting in 1887 in connection with the full report of the Committee, it was approved by a nearly unanimous vote of the Association. But it could not become a part of the Constitution without lying on the table and receiving the sanction of the next annual meeting. When it was taken up at the next meeting several members opposed it on the erroneous assumption that its adoption would result in taking the business out of the Association and committing it to a Council, somewhat after the manner of the British Association. As there were not enough copies of the amendment present to put one into the hands of each member to examine for himself, its further consideration was postponed until the next annual meeting. If members will now examine it carefully, they will see that by it the proposed Business Committee is

appointed by the same process as the former Nominating Committee, and that it has no power to take any business out of the hands of the Association, but simply substitutes a continuous committee so arranged as to enable it to do the work assigned to it deliberately and intelligently, instead of hastily and often imperfectly.

PUERPERAL FEVER A PREVENTABLE DISEASE.

At the opening of the 1888-89 session of the St. Thomas's Hospital, London, DR. CHARLES J. CULLINGWORTH, the obstetric physician to the Hospital, delivered an address on "Puerperal Fever a Preventable Disease," a plea for the more general adoption of antiseptics in midwifery practice. The address deals to some extent with statistics, and though short, it contains facts of importance to those that claim that childbirth is a simple physiological process, and to the few that hold that antiseptic midwifery and meddlesome midwifery are synonymous terms.

The profession will remember the astonishment, not to say incredulity, caused some eighteen years ago by Dr. Matthews Duncan's conclusion from careful investigation that "not fewer than 1 in every 120 women, delivered at or near full term, die within the four weeks of childbed." The late Dr. Farr, who in 1856 had declared the mortality of childbed in England and Wales to be 1 in 189, at first denounced Dr. Duncan as an alarmist, but before he died he admitted that the mortality was 1 in 129. From the Registrar-General's returns of puerperal mortality in England and Wales, it is seen that in the three years 1867-69 there were 2,228,588 children born alive; the deaths from childbirth were 10,198 (from puerperal fever 3,343), being an average mortality per 1000 of 4.37. In the three years 1884-86 there were 2,704,886 children born alive; deaths from childbirth 12,673 (6,966 from puerperal fever), giving an average mortality per 1000 of 4.68. While it is most probable that the figures of the Registrar-General are below the truth, still we see that within the three years 1884-6 there was an average of 2,322 deaths from puerperal fever in England and Wales. Other, and we may say more reliable, statistics, go to show that puerperal fever is accountable says Dr. Cullingworth, for from 65 to 75 per cent. of all the deaths from childbirth.

It is almost one hundred years since Dr. Alex-

ander Gordon published his account of an outbreak of puerperal fever that occurred in Aberdeen in December 1789–March 1792, giving a table of 77 cases that came under his own care. He showed that the midwives, nurses, and physicians were directly responsible for the continuation and spread of the disease and said: "It is a disagreeable declaration for me to mention that I myself was the means of carrying the infection to a great number of women. . . . I arrived at that certainty in the matter that I could venture to foretell what women would be affected with the disease upon by hearing by what midwife they were to be delivered or by what nurse they were to be attended during their lying-in, and in almost every instance my prediction was verified." We have similar testimony from Mr. Robertson, of Manchester, in regard to an outbreak in the maternity department of St. Mary's Hospital in 1830, due to one infected midwife, and from Mr. Blackmore in regard to an outbreak in Plymouth in 1831. In 1847 the mystery was cleared up and the first seeds of antiseptic—or aseptic—midwifery were sown by the immortal Semmelweiss.

Nothing has done more to retard the acceptance of the principles of antiseptic midwifery, and thus the practice, than that "confession of ignorance, the creed of fatalism, the very pessimism of obstetric medicine," the doctrine of autogenesis. It is impossible to see how anyone can read the statistics from the Lying-in Hospital of Vienna, from the Dresden clinic, the Paris Maternité, the New York Maternity, the Boston Lying-in Hospital, and other institutions, without being convinced of the utter fallacy of the theory of spontaneous infection. No stronger arguments can be brought forward than the facts and figures already at hand. Let us look at some of these figures of pre-antiseptic and antiseptic periods. In the Vienna Lying-in Hospital from 1863 to 1880 the rate per 1000 from puerperal fever was 11; in 1881–1885 it was 4. In the Dresden clinic the mortality per 1000 from puerperal fever was 8.7 in 1884, 1.4 in 1885, 1.4 in 1886, and 0.7 in 1887; in 1872 the mortality was 50 per 1000. In the Vienna Hospital from 1881 to 1885 there were 15,070 deliveries, with 2543 obstetrical operations, including 9 Cæsarean sections. In the Dresden clinic out of 2,775 women delivered in 1886–87, 396, or 14 per cent., required operative interference; 27 of the patients had eclampsia,

23 had placenta prævia, and 224 had well-marked contraction of the pelvis. In 1886, 77.8 of the patients in the Dresden clinic made perfectly normal recoveries, and 95 per cent. in 1887. In 1883 the mortality per 1000 from sepsis in the New York Maternity was 60.6. The antiseptic midwifery was inaugurated in the institution, and in 1884 the rate fell to 5.9, to 1.8 in 1885, and was 2.1 in 1886. In the Boston Lying-in Hospital the mortality from sepsis was 55.5 in 1882, 45.8 in 1883, 16.1 in 1884, 6.4 in 1885, and 0 in 1886.

A little more than a year ago Koch said that septicæmia was beyond the grasp of the pathologist in Germany, as antisepsis had succeeded in almost extirminating the disease in that country! (Senn: Four Months among the Surgeons of Europe, p. 63.) In the lying-in department of the Bürger Hospital in Strassburg "the antiseptic precautions are so thoroughly carried out that puerperal sepsis has never been known to originate in the walls. A small building, isolated from the main building, serves for the reception and treatment of infected patients from the city and surrounding country, and here the student finds the only opportunity to study at the bed-side and the post-mortem room the infective diseases incident to child-bed."

There is still a notion abroad, says Dr. Cullingworth, (*British Medical Journal*, Oct. 6, 1888) that this question of puerperal fever is one that chiefly concerns the lying-in hospitals. But one would scarcely suppose that the 2,708 deaths from puerperal fever in England and Wales in 1886 were all hospital cases; as a matter of fact almost 66 per cent. of them occurred in counties where no hospital exists, and as to the remainder, the lying-in hospitals of England and Wales are so few that they cannot be accountable for more than a small number of these. In a country town not far from London, says Dr. Cullingworth, puerperal fever has singled out the patients of one local practitioner. For six months every patient he attended, except two, in whom labor was completed before his arrival, died of puerperal fever. "The only way to avoid this terrible mortality, and to avoid also the enormous amount of puerperal disease which, because it is not fatal, remains unrecorded, is for every practitioner in midwifery to recognize his personal responsibility in the matter."

BRAIN OVERWORK IN CHILDREN.

The Chicago *Tribune* says: Dr. Charcot, the great French physician, says that children under 16 cannot have their brains overworked. No forcing, he asserts, will get out of them more cerebral work than the brain will accomplish without fatigue. It is not till after the age of 16 or 18 that forcing becomes possible.

It is extremely doubtful if M. Charcot ever made such a statement as the above. Such an assertion is reckless, because one cannot draw a hard and fast line at 16 years of age. If all children of 16 were made on the same mould, all had the same muscular development, all the same amount of nervous force, and the same degree of brain-development, it might be allowable to make some definite statement of the kind quoted. But to quote M. Charcot as authority for the above is dangerous, since the outcome may be that children already overworked may be seriously injured by unthinking parents or teachers.

"PROTECTION OF THE MEDICAL PROFESSION."

The following significant communication appears in the *Lancet* of October 13:

"There can be no doubt that it is high time for the great body of general practitioners to take some steps to protect themselves against the present rush of men into the profession, which is out of all proportion to the numbers leaving it, and as a result of which medical men are reduced to practice all manner of shifts to gain sufficient to merely exist. Medical ethics are becoming a dead letter, and a once noble and honorable profession is becoming little better than a trade. It behoves every medical gentleman to exert himself to the utmost to save his profession from dishonor.

"I beg to offer the following suggestions for remedying the present condition of things: 1. That every member of the profession in Great Britain and Ireland be canvassed as to the advisability of forming an association for the protection of the profession. 2. That the number of candidates admitted into the profession by the various corporations be regulated according to the vacancies occurring in the profession, as is done in the army and navy. 3. That a fee be fixed below which a medical man may not charge, and if his client be unable to pay, let him rather give

his services for nothing. 4. That the remuneration of all appointments be regulated by a council of the profession, and that no man shall take an appointment in opposition to this council."

"Medical Ethics are becoming a dead letter." In spite of the assertions of some of our cis-Atlantic, no-ethics contemporaries, we have here evidence that there is a Code of Ethics in Great Britain.

The suggestions offered by the *Lancet's* correspondent are more in the line of trades-unionism than anything we have ever seen proposed. An association for the protection of the profession would undoubtedly be a good thing if conducted on correct principles. Suggestion No. 2 would seem to be but a Utopian dream—if Utopian. The third suggestion seems inadvisable under any circumstances, would be productive of results almost as bad as are now complained of, and would stamp as paupers many people that are not paupers. And after all, the profession in England is not so overcrowded as in the United States,

EDITORIAL NOTES.

SMALL-POX IN ONTARIO has assumed such a threatening aspect that the Board of Health urges people that have not been vaccinated to be vaccinated immediately.

THE FACULTY OF MEDICINE OF PARIS received this year 373 Doctors of Medicine, including 327 French and 51 foreigners. On October 9th there were 3,668 male and 114 female students.

MENTAL ALIENATION IN NEW ZEALAND.—Dr. E. W. Alexander states that of 1,613 insane in the asylums in New Zealand, 1,302 are of foreign birth. Among the 111 native insane 21 are of the aboriginal or Maori race, which now number about 50,000,

NAPLES, it is to be hoped, will be more healthy when the now complete plans for its sanitary rehabilitation are carried out. The rookeries in four of its sections are to be demolished, and good dwellings erected. Drainage will receive careful attention, and the city is to have a sound and permanent system of water-supply.

DEATH DURING HYPNOTISM.—A Louisville paper says that at Hopeston, Ill., recently, Dr. I. N. Bishop extracted a tooth for his wife and at-

tempted to relieve her pain by an exercise of his mesmeric powers over her. He made a few movements over her face, when she screamed and fell dead. She was not subject to heart disease.

THE LOS ANGELES PEST-HOUSE seems to be in bad odor with the citizens of the place, according to the *Los Angeles Times*. It is badly in need of repairs, the residents in the neighborhood wish it removed, and threaten to get out an injunction against any repairs on it. The residents in the neighborhood where the new pest-house is to be located have already sworn out an injunction against the building of it.

EXPERIMENTAL URÆMIA IN PREGNANCY has been produced in pregnant rabbits by Drs. CHARPENTIER and BUTTE, with the view of determining the influence of uræmia upon the fœtus. They found that the fœtus died before the mother, the fœtal blood and tissues always containing a larger percentage of urea than those of the mother. The probable explanation is that the fœtus is unable to get rid of any part of the urea by excretion, while the mother can do so.

SINGULAR CASE OF SELF-MUTILATION.—A Dublin medical student, who had been subject to delusions for some time, recently removed both his eyes, and has refused to give any explanation of the occurrence. The act was committed in a field, where were found a blood-stained walking cane and a piece of wire, which were probably used to remove the eyes. The unfortunate young man was found lying down, about a hundred yards from the stick and wire.

TREATMENT OF PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—DR. W. B. COLEY analyses, in the *Boston Medical and Surgical Journal*, 74 cases of penetrating shot-wound of the abdomen. Of these 29 recovered, giving a percentage of recoveries of 39.5. The cases are divided into three classes: Class I contains cases operated on within the first 12 hours; 39 cases—18 recovered; 43.6 per cent. recovered. Class II, cases operated on after 12 hours; 22 cases—5 recovered; 22.7 per cent. of recoveries. Class III, cases in which the time of operation could not be ascertained; 13 cases—7 recovered, 5 died, 1 doubtful; 57 per cent. of recoveries. The causes of death in the cases that did not recover were as follows: hæmorrhage 4 cases, peritonitis 9, shock 8, wounds not

found by operator 4, pneumonia 1, acute pericarditis 1. Dr. Coley's classification shows very clearly the advantage of an early operation, the percentage of recoveries in cases operated on during the first 12 hours being nearly double that of cases operated on after 12 hours.

LOSS OF MEMORY FROM AN ACCIDENT, while curious, is not so very rare. On October 30 Dr. Hillebrand, of Freeport, Ill., was exercising a colt. The horse became rather restless and unmanageable, and that is the last thing that the doctor remembers concerning the accident. He was discovered lying unconscious in the street, and immediately taken to his residence. Dr. Buckley was summoned without delay, and after examination discovered no bones broken. The left wrist was 'sprained and his face and head cut and badly bruised. It was some hours before he regained consciousness, but, as above stated, remembered nothing of the runaway, and even on the next day could not recall any particulars of the accident. The doctor is suffering considerable pain, and will be compelled to remain indoors for some time.

THE HAMMOCK AND THE SWING.—A writer in the *Chicago News* gives the result of an experiment, showing that the instinct of children has in it not only a love for recreation of a choice sort, but a sanitary common sense. A number of swings were suspended at a summer home for children, and near by were swung two dozen hammocks. The latter were almost always full, but the swings rarely were in use. The hammock is the most natural invention to give perfect rest and ease to the whole body, with a delicious sense of motion and activity. Every home should have several hammocks swung under trees, for the use of both adults and children. It will tend greatly to relieve the strain of everyday toil, and to sweeten the intercourse of its members.

THE MEDICAL STUDENT'S PARADE in Toronto on the night of October 31 ended in a serious affair. While the students were on their way home they stopped in front of the house of Dr. McCully, a specialist, who is dubbed a quack by the local profession, and commenced to groan and hoot. McCully appeared at an open window with a gun. This angered the students, and they commenced to throw bricks and stones. McCully then fired three times at them. Harry

Oldright, son of Dr. Oldright, received an ugly wound in the leg, and three others were slightly wounded. The gun was loaded with buckshot. Dr. Oldright swore out a warrant against McCully, and he was arraigned at the police court and remanded till to-morrow. The affair has caused great excitement.

A POCKET CLINICAL PNEOGRAPH has been devised by DR. MORTIMER GRANVILLE, and is manufactured by Weiss, of London. It consists of a delicately suspended and counterpoised semi-disc (made of talc), which rises and falls when the instrument is held over the mouth of a recumbent person, or swings vertically when held in front of the mouth of a person sitting or standing. The remainder of the apparatus consists of an arrangement similar to that used in the sphygmograph, by which the smoked paper is moved under a needle attached to the semi-disc. The tracing made by the needle is about as long and of a similar character to that made by the needle of the sphygmograph. The character of expiration is shown by the tracings, and some notable and apparently significant differences are seen in the results obtained in various pulmonary conditions.

THE ENGEL CREMATOR AT MILWAUKEE.—It has been decided to construct in Milwaukee a cremator similar to the one in operation in Minneapolis. It is thought that the cremator will be in operation by November 20. The furnace in Minneapolis is of the Engel pattern with numerous improvements. It is 32 feet long, 8 feet high and 5 feet wide. This is enclosed in a large building, inside of which are elevated drive-ways to the dumping spouts. The cremator is absolutely smokeless and odorless. The process of cremating is one of total destruction, all material being reduced to a fine, light-colored ash. At Minneapolis, while the Health Commissioner of Milwaukee visited the institution, six horses, a cow, and fifty dogs were dumped into the cremator, and in four hours had been reduced to ashes. The cremator, which has two fires, one to consume all noxious fumes, is capable of burning an unlimited amount of garbage or dead animals. Drawings have been made of the parts of the furnace for Dr. McIntosh, of Chicago, who will prepare them for the stereopticon. They will be shown before the annual meeting of the American Public Health Association to be held in Milwaukee the latter part of this month.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting May 16, 1888.

THE PRESIDENT, T. C. SMITH, M.D., IN THE CHAIR.

(Concluded from page 602.)

Dr. Swan M. Burnett was called to the Chair. DR. THOMAS C. SMITH read the history of

A CASE OF TRANSVERSE LACERATION OF THE CERVIX UTERI.

(See p. 665.)

DR. BUSEY: The management of the case was correct, and the result was satisfactory. Primary trachelorrhaphy was not now often practiced. It was not always free from danger, and the result was usually unsatisfactory. In very many cases lacerations of the cervix would heal without operative interference. The causes of this particular form of laceration were not easily understood. In this case there was, probably, a combination of circumstances and conditions. The labor was premature. The physiological changes which take place in the tissues of the cervix coincident with the progress of pregnancy had not been completed. The tissues had not reached that stage of maturity which promotes and facilitates dilatation. The amniotic fluid had escaped prematurely and consequently the dilating influence of the bag of waters was absent. There was also probably mal-position of the presenting vertex. In consequence of the rigidity and non-dilatation of the cervix and os extension was delayed or arrested, and the vertex was driven against the thinned posterior wall of the lower uterine segment at the point where the laceration began. In proper position of a vertex presentation in natural labors the vertex should occupy the center of the orificial dilatation. In this case it impinged against the attenuated wall of the lower segment posterior to the cervix. These three conditions may have been present. He suggested them as possible causes of the laceration.

DR. SMITH: Labor had not begun when he first saw the patient. The condition of the cervix was just as Dr. Busey had described it.

DR. KLEINSCHMIDT: Agreed with the explanation offered by Dr. Busey. In support of the statement of the unprepared neck he would call attention to the fact that it is more likely to tear in premature labor and abortions.

DR. SCHÆFFER: Might not the tear have been due to a brittleness or tissue-change at the point of rupture rather than to mal-position?

DR. SMITH: It is not usually found in primiparae.

DR. H. L. E. JOHNSON: Thought the case one

of rupture above the os uteri, and not laceration of the cervix as usually understood. Thought it suggested attempted abortion; that some instrument had been passed into the os rupturing the membranes prematurely and uterus at point of injury, or predisposing it to tear. It is unusual for the membranes to rupture so early in premature labor, that is, before any obliteration of the cervix or dilatation of the os, or with such slight pains, in the absence of mechanical interference. Dr. Smith does not state whether hydramnios or disease of the membranes existed, predisposing to rupture. That point should have been determined. He did not agree with Dr. Busey that rupture was caused by flexion of the head, as that is the normal and first part of the mechanism in L. O. A. presentations. Until flexion did take place the fetal head could not come in contact with the cervix uteri. He did not agree with Dr. Busey that exaggerated flexion caused the trouble, because the more flexion we have the more the small diameter of the head is made to correspond with the diameters of the pelvis. He agreed with Dr. Smith's treatment. The cervix should not have been operated upon at the time, and the result bears this out. He had examined a large number of patients between two and four weeks post-partum, and a large number of lacerations known to have occurred had healed—in some cases extensive bilateral lacerations. He had operated primarily on a case of lacerated cervix and the result was worse than the original injury.

DR. SMITH: In this case there was no deformity of the pelvis. At his second visit the child's head was in the position of flexion and was descending. The rapid transit of the head through the pelvic cavity would indicate that there was no deformity.

DR. C. W. JOHNSTON believed that in a certain proportion of the cases mentioned by Dr. H. L. E. Johnson, and in others of a like nature, where a laceration of the cervix seen immediately after labor, at a later date is found to have disappeared, the patient's condition after healing has taken place is no better than before such healing occurred. The angles of laceration in such cases have been closed by granulation and cicatrization, and it is doubtful if this kind of healing produces a more happy result than no healing at all. Theoretically it was quite possible for lacerations of the cervix to heal by first intention, and clinically cases are occasionally found where such union has occurred. If union by first intention, however, does not occur it may at least be considered immaterial whether healing by second intention subsequently takes place, or whether the parts afterward remain separated. In the light of what we daily observe as to the pathological moment of the so-called cicatricial plug, healing by any means other than first intention is not to be especially wished for. While a certain proportion

of our trachelorrhaphies are undoubtedly performed for the single purpose of uniting edges which have been disunited and have remained apart, yet still in a large number our main effort is directed to the removal of the cicatricial material which has been deposited in the angles of the wound—a form of healing which, as has been said, is of no value to the patient.

DR. H. L. E. JOHNSON: He thought it best to allow the wound to heal by granulation. Did not agree with Dr. J. that the cervix healed by granulation would present a cicatricial line which would give as much disturbance as if it had not healed, and require the operation ultimately. No such operation is required or has ever been done (viz., stitching up a cervix which has healed and have it heal a second time by an operation). It is those cases lasting a long time and not healing, and in which histological changes have taken place and produce local and reflex symptoms which require surgical treatment for their cure. He could not agree with Dr. J. that a cervix could heal by first intention. Thought it impossible—a physical impossibility—as the lochial discharges would pass between the rent, and also the cervix being a muscular or musculo-fibrous organ its normal tonicity and contractility would separate the edges and prevent union by first intention. The pressure of the vaginal walls is insufficient to keep the edges in apposition. Nearly every parturient cervix is lacerated to a greater or less extent. Few require operation. The presence of these cicatricial lines is one of the points to be remembered in forming an opinion as to whether or not the patient had borne children. They cause no symptoms and require no treatment.

Philadelphia County Medical Society.

Stated Meeting, September 12, 1888.

THE PRESIDENT, J. SOLIS COHEN, M.D.,
IN THE CHAIR.

(Concluded from page 641.)

SYPHILIS OF THE LARYNX, TRACHEA, AND
BRONCHI.

Diagnosis.—Differential diagnosis between secondary and tertiary lesion is sometimes difficult, particularly in the transitional period especially described by Whistler. The discriminating characteristics are less well marked in the laryngeal syphilis, perhaps, than in any other variety.

It may, however, be broadly stated that secondary lesions, erythematous, papular condylomatous or paralytic, are superficial; and that tertiary lesions are gummatous, ulcerous, carious, necrotic and deep-seated. Laryngitis occurring within a few months of infection is almost invariably secondary. Lesions appearing before the

termination of the third year are presumptive secondary; those appearing within the third year, secondary or transitional; and those appearing after the termination of the third year, tertiary. Nevertheless, secondary lesions may be ulcerous, and undoubted tertiary manifestations have been recognized even within nine months of infection.

The history of the case, and the previous or actual presence of manifestations of syphilis elsewhere, are the main positive factors in the diagnosis of specificity, especially in the earlier stages of either variety. The later lesions of tertiary syphilis are often sufficiently characteristic; sometimes not at all so. In cases of doubt, antisyphilitic treatment will almost always detect a lesion of syphilitic origin, but not invariably. Hence, in instances of strong suspicion, the various methods of antisyphilitic medication should be thoroughly tried before the test is abandoned. This suspicion is justifiable in cases of obstinate chronic laryngitis, whether ulcerative or not, in individuals in whom no other appreciable local or constitutional cause can be detected.

Laryngoscopic inspection is an invaluable aid in diagnosis; though practically indispensable, it is inadequate for fully appreciating the extent of deeply seated lesions; and its revelations are not always sufficient to establish the diagnosis in the absence of corroborative lesions elsewhere. Erythematous and catarrhal inflammation of secondary syphilis, when diffuse, are not to the ordinary eye distinguishable from similar non-specific conditions. Circumscribed erythema, though usual in syphilis, occurs in non-specific laryngitis also, consequently that condition alone is insufficient for discrimination. Patchy erythema on the vocal bands, and elsewhere, may be regarded as characteristic. Not so, however, the shaded pigmentations at the extremities of the vocal bands.

Symmetric bilateral localization of erythematous and other patches is highly characteristic of secondary syphilis; but a contrary condition by no means excludes the diagnosis. Isolated bilateral congestions of the supra-arytenoid structures and of the Wrisbergii has been cited as pathognomonic. Nothing can be more fallacious or misleading. Enlarged inguinal and post-cervical glands furnish excellent corroborative testimony of syphilis.

Papules, or condylomata, upon an erythematous mucous membrane, are to be considered pathognomonic. Their recognition may require an exceptionally good light on the one hand, or repeated examinations on the other. They must be carefully discriminated from minute collections of mucus or of saliva.

Diffuse gummosus infiltration is to be distinguished first from inflammatory syphilitic infiltration by the coexistence of gummosus processes elsewhere, its more circumscribed contour, and its sharper definition. Differential diagnosis is much easier after it has reached the stages of liquefaction and ulceration.

Syphilitic ulceration usually proceeds from above downward, rarely in the opposite direction, and often in extension from ulceration in the pharynx. Repair usually proceeds from below upward. Apart from these guides there is nothing positively characteristic enough to determine an ulceration to be syphilitic in character by mere inspection.

The absence of pain has been regarded as characteristic; but, on the one hand, carcinomatous ulceration often exists without pain, and on the other hand, the ulcerative lesions of syphilis are sometimes attended with lancinating pains of the most severe character.

In the gummatous stage of tertiary syphilis diagnosis is not difficult. They may be confounded with other neoplasms, and with abscess. In cases of doubt, antisyphilitic treatment should clear up the diagnosis. The physical distinction between gummata and condylomata may in some instances be obscure (Semon).

The main reason why gummata are so infrequently seen as to have led some observers to an erroneous opinion as to their rarity, is that many patients do not present themselves until after the stages of liquefaction and ulceration have become established. When this stage has not been observed, and the larynx, as is more usual, is not inspected until after ulceration has considerably progressed, the appearances are not always characteristic. They may be confounded with those of lupus, carcinoma and tuberculosis. The general diathesis, the clinical history, the existence of enlarged submaxillary and post-cervical lymphatic glands, the character of concomitant affections of the skin and mucous membrane, the aspect of the patient, assist in discrimination. Sometimes, too, tuberculous and syphilitic lesions coexist.

The typical tertiary ulcer, sharply defined, and below the surface of the mucous membrane, is more or less circular when recent, more or less crenated when reparation is taking place at one or more points of the circumference, and looking as though cut out with a punch when in oedematous tissues. Its borders are sharp, elevated, but not often undermined, and more or less rounded in their visible outline, and are surrounded by a more or less circumscribed inflammatory areola in the mucous membrane. The bottom feels hard to the probe on palpation. The bed of the ulcer is grayish, or lardaceous, yellow from fatty detritus, and covered with adherent concrete pus, through which, here and there, prominent rosy granulations often project. The surrounding tumefaction is harder and more indurated than in other varieties of ulcer. Purulent accumulations are rather indicative of the syphilitic process. At a later date denuded or necrosed cartilage may be visible in suitably located ulcers.

In cases in which neoplasms have become developed at the seat of existing ulcerations, or of

cicatrizated ulcerations or erosions, it is often impossible to pronounce as to their nature, even by the test of antisyphilitic treatment. Not only do such neoplasms exist independently of the syphilitic process, or as the result of irritation provoked by syphilitic process in the vicinity, but, when undoubtedly syphilitic in origin, they rarely disappear under specific medication. Tertiary syphilis is usually recognizable in the stages of œdema of the larynx; and almost always in the reparative stages of cicatrization, or in the subsequent stages of stenosis, whether from cicatricial retraction or from organization of effused products.

Prognosis.—Secondary lesions, even when ulcerative, are most frequently curable without cicatrix or without any other sequel. Exulceration of the vocal bands sometimes leaves permanent defect of tissue. The prognosis is good except during temporary conditions of œdema, when it may be grave for the time being. The inflammatory congestion and turgescence is more chronic than in catarrhal inflammations, and are often recurrent. Actual hyperplasia is apt to remain permanent, even after cure of the syphilitic lesion, despite the most assiduous treatment; and when it occupies a vocal band the voice may be permanently impaired. The singing voice may remain imperfect, although the conversational voice be fully restored; the injured tissues being unequal to the nicety of adjustment requisite for cantation.

In tertiary lesions the prognosis depends mainly on two factors: First, on the impairment of the general health, and the significance of lesions elsewhere, especially in the brain and meninges, and in other important organs. Second, in the extent of ulceration and the character of deformation or stricture which may follow. Temporary gravity exists in the presence of œdema; during the period of exfoliation of necrosed cartilages, and in acute bilateral paralysis of the dilator muscle, the result of exposure to cold or other cause, or to unilateral paralyses when the opposite side is immobile from gumma, or from crico-arytenoid ankylosis (Charazac: *Rev. Mens. de Lar.*, Sept., 1884), any of which conditions may demand prompt tracheotomy to prevent death by suffocation. Ulcerative lesions of the trachea may be fatal by hæmorrhage from penetration of large blood-vessels; by pneumonia from access of food through perforation of œsophagus (Berger); or by septic processes due to rupture of the mediastinum. Permanent impairment of the voice is to be expected in all cases in which the vocal bands undergo serious injury, and in many in which permanent changes are likely to take place in other structures contiguous to the glottis.

Glutition is rarely affected, even after complete destruction of the epiglottis; and in exceptional cases difficulty is mainly confined to fluids swallowed without deliberation.

Stricture rapidly supervening upon hyperplasias is often amenable to active treatment, sometimes with striking rapidity (Krishaber: *loc. cit.*); but the more frequent stricture of slow progression can only exceptionally be brought under control.

Serious danger attends even cure of extensive ulcerative lesions in the interior of the larynx, for the resulting stricture, if severe, is likely to necessitate tracheotomy, with great probability of permanent retention of a canula. It is rarely amenable even to excision of cicatricial tissue by external access. Subglottic stricture is much more serious than supraglottic, and tracheal far more serious than laryngeal stricture. Stricture of the trachea, when low down, is practically insusceptible of amelioration; and death by slow apnoea, or by sudden suffocation, is the usual outcome.

When the syphilitic cachexia has advanced so far as to have produced incurable lesions in important viscera or in the cerebrum, death may ensue from these causes despite sustained cure of syphilitic lesions in the larynx. In cases complicated with paralysis of the dilator muscles of the larynx from cerebral lesion, the death may take place by occlusion of the glottis and suffocation, or by encephalitis and coma.

In hereditary syphilis the prognosis is very much the same as in tertiary syphilis; being much worse in infancy and childhood than in more delayed manifestations. The small size of the larynx renders stricture and intercurrent œdema far more significant; and the tendency to spasm of the larynx inherent to all laryngeal affections in childhood presents an additional element of danger. Fatal issues from these three causes are not infrequent. An element of uncertainty as to the final result remains in all varieties of syphilis of the larynx and trachea, due to the fact that permanent liability to recurrence prevails in many instances, despite the best apparent results of the most judicious treatment; and often, too, after prolonged intervals of immunity from any further manifestations of constitutional syphilis.

Treatment.—Fortunately, lesions even of great destructive and menacing tendency are amenable, as a rule, to treatment; often promptly.

The treatment, broadly stated, is that applicable to constitutional syphilis in general; mercury in the early manifestations and iodides in the late ones. In many of the latter, if not most, the mixed treatment combining the two specifics is the most serviceable. In congenital syphilis the gray powder is believed to be the most efficacious form of the drug. While willing to admit that secondary lesions often subside without traces and without much risk of subsequent tertiary manifestations, although mercury be withheld, I deem it the more prudent practice, and therefore best practice, to employ mercury; in the belief that its specific constitutional influence affords

the patient better protection as to future manifestations. As to the value of iodides in tertiary syphilis, there is no difference of opinion. Tonics are often indicated. All sources of irritation, exposures, excessive use of the voice, alcohol and tobacco, are to be avoided.

Sedative inhalations in vapor or spray are often of great topical benefit in subduing collateral inflammation; and antiseptic inhalations are indicated in gangrenous cases.

Secondary syphilis. Mercury may be administered by the stomach or by the skin. When the lesions are moderately severe or slow in progress, the corrosive chloride may be administered in doses of from $\frac{1}{8}$ to $\frac{1}{4}$ grain, three times a day. The green iodide may be given in doses gradually increased from $\frac{1}{8}$ of a grain three times a day to the point of tolerance. The addition of extract of belladonna may cause it to be better borne by the stomach. In individuals in whom serious gastric disturbance is produced before any specific effect has been noted, and in seriously severe cases and cases of rapid progress, inunctions of a drachm of mercurial ointment daily are preferable, or pencillings with solutions of oleate of mercury in oleic acid, 10 per cent. Lewin prefers hypodermatic injections of corrosive chloride. Concurrent stomatitis is to be combated by the internal administration of potassium chloride, or the use of a saturated solution of that salt, or of a weak solution of potassium permanganate as a mouthwash. It is hardly necessary at the present day to mention that salivation is to be avoided. In my own experience topical medication is, as a rule, superfluous in non-ulcerative secondary syphilis, and often unnecessary in the presence of ulceration. When topical medication seems necessary, inhalations of sprays of corrosive chloride (Demarquay) half an ounce or more daily of a solution containing 1 grain to 4 ounces of water are useful locally and constitutionally. In particularly obstinate conditions, especially in the presence of hyperplasias, the topical applications of solutions of iodine and potassium iodide in glycerine (Schnitzler) half a drachm and a drachm respectively to the ounce, made daily or at longer intervals sometimes accelerates the cure.

In the transitional stage and in the tertiary stages, the mixed treatment has been the most beneficial in my own practice; $\frac{1}{8}$ to $\frac{1}{4}$ of a grain of the corrosive chloride, 5 to 10 grains of potassium iodide in half an ounce or more of the compound syrup of sassa-parilla, three times a day. It may sometimes be necessary to increase the dose of the iodide up to the point of tolerance. In such cases the "grain to drop" solution is the most convenient preparation. The danger of inducing œdema of the larynx by sudden large doses must not be forgotten. When necessary sodium or ammonium iodide may be substituted for the potassium salt, or hydriodic acid may be employed.

In the presence of œdema, hypodermatic injections of corrosive chloride, (Lewin), $\frac{1}{8}$ gr., twice a day for a day or two, and after improvement, at intervals of three days or more, have proved quite efficacious. If amelioration is not prompt, and if the patient cannot be carefully watched by an attendant competent to interfere in an emergency, it is best, in my opinion, to perform prophylactic tracheotomy, instead of awaiting its urgent indication. The same rule is applicable to threatening cases of extensive hyperplasia, whether from specific or from non-specific infiltrations.

Nevertheless, remarkably happy results, even in urgent cases of these kinds, have frequently followed active treatment by inunction (Krishaber) and by hypodermatic injection (Lewin). Intubation of the larynx from the mouth (O'Dwyer) has been recommended as applicable in many instances of œdema and constriction heretofore treated by tracheotomy. As yet, I know of no experience with intubation in this special connection.

Ulcerations heal more promptly when the constitutional treatment is seconded by topical cauterizations with fused silver nitrate, or with mercuric nitrate, 1 part to from 4 to 10 of water, or with cupric sulphate in crystal, or saturated solution. Chromic acid, 1 part in from 5 to 8 of water, has long been extolled (Isambert). Some prefer iodoform (Morgan). On the other hand, extensive ulceration often heals promptly under the influence of constitutional treatment alone.

Vegetations, detached flaps of mucous membrane, and semi-detached fragments of necrosed cartilage, call for operative removal with cutting forceps, evulsion forceps or snares, as may be most convenient, when these products are so located as to interfere with freedom of respiration or to threaten such interference. When these manipulations are impracticable, tracheotomy may be requisite. When tracheotomy has been performed under any of the conditions mentioned, the canula is to be removed as soon as it has become apparent that its retention is no longer essential to the safety of the patient. Cicatricial stricture of the larynx may be treated by the introduction of the intubation tube through the natural passages (O'Dwyer). This treatment may be applicable to stricture high up in the trachea. Stricture in the middle portion of the trachea requires low tracheotomy and the introduction of a tube long enough to reach beyond the constriction. Stricture at the bifurcation is hopeless.

Paralyses, even those of the posterior crico-arytenoids, are usually amenable to anti-syphilitic treatment even when of considerable standing. This fact seems to indicate that the atrophy found in necrotic paralysis is not due to simple inaction of the muscle, but rather to trophic impairments of neurotic origin. Electrization may be employed when relief does not ensue from systemic medication.

Membranous webs, occluding the glottis from side to side, are divided by incision or by galvanoelectric-cautery, the edges cauterized, and readherence prevented, if possible, by frequent introduction of dilating sounds. These laryngoscopic operations are often rendered futile by insurmountable tendency to recicatization, whereby the morbid condition is reproduced. Success in cases of this kind would seem to require exposure of the interior of the larynx by external division of the thyroid cartilage, and excision of the whole of the cicatricial tissue (Mackenzie).¹

When syphilitic laryngitis has existed for a long time, such an amount of destruction may have taken place, and such a degree of systemic poisoning, as to render recovery impossible. The constrictions produced by the cicatrices of extensive ulcers, and the adhesions between adjoining surfaces, in cases that recover, are often such as to render tracheotomy necessary, with the permanent use of the tube; for the constrictions following syphilis are not, as a rule, amenable to dilatation.

Threatened asphyxia or unconquerable dyspnoea, from gumma, loose cartilage, morbid growth, abscess, or oedema, may necessitate tracheotomy. Tracheotomy for the purpose of conquering dyspnoea due to tumefactions in the larynx is perfectly justifiable and usually successful. It is likewise justifiable for the mere purpose of securing rest to the organ—much more so, indeed, than in analogous conditions attending tuberculosis.

The treatment for local adhesions consists in relieving the tension as far as possible by laryngoscopic division of the constricting bands of tissue, with knife or with electric cautery, and then cauterizing and recauterizing the adjacent surfaces, to prevent fresh adhesions. These cases require careful watching and prompt attention to overcome the disposition to recurrence, which is very apt to take place in spite of all efforts. When the epiglottis is implicated, much good can be done by teaching the patient to move the organ frequently by means of his forefinger.

In a case of stenosis due to "concentric hyperchondrosis," as a result of the hyperplastic chondro-perichondritis, Prof. Heine performed a successful resection of the anterior portion of the thyroid cartilage, splitting that structure in the middle line, separating the perichondrium and superjacent soft tissues, to the distance of one-half its surface on the two sides, with the elevator, and then removing the denuded portions by longitudinal section with bone forceps. The patient rallied so well from the operation that an artificial vocal apparatus could be substituted for the ordinary canula on the fifth day. He became able to resume work after a while; but the disease made new inroads, and he died, 11 months later, in an advanced stage of tuberculosis.

Despite the most judicious treatment, and the most satisfactory immediate results, recurrence or recrudescence takes place in many instances at variable intervals, requiring resumption of specific treatment. The most satisfactory results claimed by any writer have been in cases actively treated by Lewin with hypodermatic injections. It is advisable to keep patients under observation for many months after active treatment has been discontinued. Mercuric iodide (biniodide) in small doses, one-twentieth to one-tenth of a grain, three times daily, may judiciously be given for prolonged periods during which apparent health exists. Potassium iodide, in diminishing doses, should be administered from time to time for a few days every month until the patient begins to show susceptibility to physiological effects from small doses; and then this susceptibility should be tested from time to time at intervals of a few months. Such supervision for two years at least seems to present the best prospect for riddance from the diathesis.

It may be mentioned in conclusion that, under intercurrent attacks of erysipelas, obstinate cases of tertiary syphilis of the larynx and trachea have undergone cure after having resisted all medicinal treatment.

Obstetrical Society of Philadelphia.

Stated Meeting, October 4, 1888.

THE PRESIDENT, T. M. DRYSDALE, M.D.,
IN THE CHAIR.

DR. JOSEPH PRICE reported his

RECENT WORK IN ABDOMINAL SURGERY.

There were 65 cases of operation, with 8 deaths, as follows:

Double pyosalpinx with double ovarian cyst and purulent peritonitis. Autopsy showed pyonephritis—7 days. Extra-uterine pregnancy. Moribund 36 hours before operation, 24 hours. Supra-vaginal hysterectomy for sarcoma of uterus and all abdominal viscera—4 days. Resection 20 inches of large and small intestine for carcinoma. Hopeless. 26 hours. Exploration and drainage. Large multilocular cyst right ovary. General malignancy. Parent cyst evacuated. Hopeless. Operation for temporary relief—4 days. Perforating typhoid ulcer. Evacuation of muddy fluid and lymph. Reacted well for 12 hours—36 hours. Hysterectomy for sarcoma of uterus and left ovary. Bowel involved—3d day. Strangulation of ileum. Released adhesions. Recurring attacks of collapse for three days before operation. Hopeless—25 hours. Total deaths, 8.

The mortality list gives a small group of these hopeless cases we are called upon to give some relief. In short they simply command you to do

¹ Med. Times and Gazette, August 19, 1871, p. 218.

something for relief. If there is one chance they demand it. As a rule they have been seen by one or many physicians, and have refused any early operative interference, or delay has been advised. We find in such cases just those pathological conditions that should at least induce us to recommend, nay more, to insist and urge the removal of all such murderous diseases. If all operators and practitioners recognized the importance of early operation in these and analogous conditions as they do in strangulated hernia, the mortality would be greatly reduced and a world of suffering saved. Early interference in ovarian cystoma is generally taught now. The importance of the early removal of the appendages in fibroid and myomatous uteri has not received that attention it deserves. The tubes and ovaries are diseased in a majority of these cases, and much of the suffering is due to their pathological condition. The mortality and the suffering in pelvic inflammations, the sequelæ of gonorrhœa, are very great, and the country is covered with neglected cases. If cases carrying typical large pus tubes in this city were distributed there would be at least one in every street, alley and court. In my experience with small tumors in young women, I have been convinced of the propriety of early removal on account of accidents incident to their development and growth. Many are dermoids and prone to strangulation and suppuration, recurring attacks of localized peritonitis complicating their condition. I have been called upon to operate upon at least six of these young women in bed, emaciated, with quick pulse and high temperature. The general condition bad for so serious an operation as abdominal section. If these operations are done early while the patient is in fair condition, every risk of the operation is minimized—short anæsthesia, short incision, rapid enucleation, secure ligaturing, thorough irrigation and good drainage—the mortality will be very low and the much complicated and desperate cases rare.

DR. J. M. BALDY thought that such an opportunity, as was now presented by one of the cases presented by Dr. Price, should not be neglected, and that he would say a word about early operation in cases of tubal disease. A great deal of commendation had been expressed of these operations on the ground that very little trouble was likely to arise subsequently. The case referred to had been under the care of Dr. Daland and that he had had the pleasure of examining the post-mortem specimens with the doctor. The specimens, together with the clinical history, set the subject forward in a very vivid way. The history of the case was from the beginning one of tubal inflammatory trouble. Seven years before her last illness she had fallen into the hands of one of the oldest and best known gynecologists in the city, but who is not an operator. Dilatation and other well-known methods of treatment were

persisted in for months. Her real condition was evidently not recognized. She went on from bad to worse and finally in her last illness fell into the hands of Dr. Daland. She fell into collapse three times during this sickness and an operation was urged both by her attendant and the consulting surgeon; their hands were, however, tied by the consulting physicians. At the last moment an operation was agreed to but the patient died. The specimens and autopsy showed double pyosalpinx, with both ends of both tubes impervious. Intestines were bound down in a mass on the tubes, and strangulation had occurred. Such a condition of affairs should not have been overlooked by any one, and an operation was strongly indicated. The case operated on any time during those seven years would have been saved with little risk. The case ran a course quite common, and which can only be prevented by early operation. In answer to a question from Dr. DaCosta as to how he knew there had been this condition seven years ago, he said that the woman had suffered continually with the same symptoms from the first. That she had either had the same condition then or it had been aggravated from a mild to a severe form of the disease by the treatment she had received.

DR. WM. GOODELL could corroborate the statement that the appendages were diseased in fibroid tumors. The larger the tumor the more likely are the ovaries and tubes to be diseased and the harder to remove. He was not sure but that in young women where the tumor was growing rapidly, it would not be better to remove the appendages early. Some years ago he had thought that dermoid tumors were solitary, but that two years ago he had removed a dermoid from each side, and had since noticed in the literature a number of others reported.

DR. M. PRICE said that the delay in treatment of many of these cases was due to the erroneous teaching in regard to inflammatory pelvic troubles. His belief was firmly fixed that they began as tubal trouble. In such cases leakage took place and set up other inflammatory trouble. He had been called in consultation to a case recently which was being treated as cellulitis, as usual. The patient had been an invalid for years; had been blistered, etc. The attack was relieved temporarily, but had subsequently returned and she was now in a bad septic condition. The tubes contain pus and the woman will either die of her trouble or be relieved by an operation. Her attending physician is a good man, but he has been taught that every trouble in the pelvis of an inflammatory character was cellulitis.

DR. HOFFMAN had lately come across a patient with fibroid tumor, who had been operated on three years before, but whose appendages had not been removed. She had great pain, and in one of our large institutions her trouble had been

pronounced *uterine neuralgia*. The operation revealed the colon adherent throughout almost its whole extent. Both appendages were diseased, and I had absolutely to dig them out. These difficulties probably caused the former operator to stop, and he would not have overcome them had it not been for the kind aid of Dr. Price.

DR. THEOPHILUS PARVIN exhibited a specimen of extra-uterine pregnancy removed by Mr. Tait in the latter part of August. Pregnancy was supposed to have advanced six or seven weeks. Rupture had taken place two days before the operation. The patient was doing well when he last heard of her condition, four days after the operation. He thought that Mr. Tait was really the most wonderfully expert abdominal surgeon he had ever seen. In his work no antiseptics are used; perfect cleansing of the hands with soap, water, brush and towel; perfect cleansing of the abdomen; incision through the skin and underlying tissues; hæmostatic forceps used if necessary, but frequently not required; the use of forceps to take up the tissues as the peritoneum is approached; the raising up of the peritoneum almost an inch so that there is no risk of injuring anything beneath the membrane; incision into the peritoneum; the moment the incision is made the introduction of one or two fingers or rather the index finger and the thumb. In this case the diagnosis was not positive, only probable, before opening the abdomen, but as soon as he had introduced the finger into the abdominal cavity, he said that it was a case of extra-uterine pregnancy with rupture of the tube. It took probably five minutes to bring up the ruptured cyst and ligate the tube with the Staffordshire knot. After removing the tube and ovary, water was poured in through a funnel to which was attached a rubber tube with a nozzle. The metal nozzle was pushed around in all parts of the abdomen so as to wash out all of the clots. In this particular case two pitchers full of water were used, a drainage tube was introduced and three stitches closed the abdominal incision. This patient did not have a temperature above 100°, and when seen three days later her recovery seemed almost absolutely certain.

DR. PARVIN also exhibited the following instruments:

THE AXIS TRACTION FORCEPS OF DR.
STEPHENSON,

Professor of Obstetrics in the University of Aberdeen. The forceps closely resembled the Simpson, being only a little longer and the pelvic curve greater. The traction is hooked on in front of the lock after the forceps is applied.

{ DELORE'S FLEXIBLE BLUNT HOOK; PAJOT'S
CURETTE FOR REMOVING THE REMAINS
OF A MISCARRIAGE,

consisting of a curette, the curve of which may

be altered while the instrument is within the cavity of the uterus and to which different sized extremities may be attached.

DOLÉRI'S ÉCOUVILLON

for brushing out the cavity of the uterus after incomplete abortion; before introducing the instrument it is dipped in an antiseptic solution. To this treatment its inventor has given the name of *écouvillonnage*. Sometimes the use of the curette precedes that of the *écouvillon*.

MATHIEU'S INSTRUMENT FOR WASHING OUT THE
UTERUS,

consisting of two tubes, lying closely together with small openings on their approximated surface. After introduction into the uterus the two tubes are separated by means of a screw, leaving a space for the water to flow from the uterus.

DR. WM. GOODELL thought that after seeing Stephenson's forceps he could justly lay claim to all priority in the axis-traction device. Many years ago in his work at the Preston Retreat, he found that his back so often gave out while making axis-traction with his left hand on the lock of the ordinary forceps, that he sewed a stirrup to the end of a leather strap. The other end of the strap he wound around the forceps handles near the lock and in the stirrup he placed his foot. He usually hung the strap so near the floor, that his heel rested on the latter, the traction force being made merely with the toes or ball of the foot. He thought Dr. Price had probably seen this impromptu device hanging on a gas fixture in the lying-in-room of the retreat. Of course the woman lay on her back with her nates drawn over the edges of the bed.

DR. PRICE remarked that he had seen the device spoken of by Dr. Goodell.

(To be concluded.)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Akromeglia—Infantile Hemiplegia with Epilepsy.

The first meeting of the New York County Medical Association for the season of 1888-89 was signalized by the presentation of the first case ever known on this side the water of the remarkable disease described for the first time in 1886 by Maril under the name of *akromeglia*. Dr. Adler, who exhibited it, first gave a brief sketch of the few cases of the disease which have been reported in Europe, and then went on to say that the designation of *akromeglia*, which simply meant enlarged extremities, was not a very satisfactory one; but it had now been generally accepted and,

in our present total lack of knowledge regarding the pathology of this affection, it would perhaps answer as well as any other.

The patient, a female, was a native of Germany, 34 years of age and married, and first came under observation in February last, at the German Hospital. Her mother had died from the effects of a fall, and her father was still living. She also had three brothers living, all in the enjoyment of robust health. She was strong and healthy, she stated, up to her 18th or 20th year, the time of the onset of her present trouble not being very clearly remembered. She began to menstruate in her 15th year, but the periods were always very irregular, and at the end of three years finally disappeared. She thought she was about 20 when she first noticed that her feet would swell from time to time; although a bandage or tight-fitting shoe, she said, would always readily reduce the swelling. About this time she also noticed some enlargement of the submaxillary glands.

The patient was unable to give any exact history of the present abnormal growth. She was married in her 20th year, and when she was 23 her wedding ring became so deeply imbedded in the tissues of the finger that it had to be sawed off. What she principally complained of all along was pain in the back and great weakness, and she was also subject to frequent attacks of migraine. The pain in the back she attributed to a long ride, from which she never recuperated. She had for some time been unable to walk, and spent most of her time in a semi-recumbent position.

On looking at the woman, Dr. Adler said, one was at once struck with the immense size of the head and the marked projection of the lower jaw. At the first glance it looked like a case of myxœdema or one in which there had been complete extirpation of the thyroid gland. The entire cranium was greatly enlarged, and the protuberance of the occiput was especially marked. The lower jaw was immense, and the tongue was greatly hypertrophied and flabby. There was no alteration in the teeth, except that those of the lower jaw were separated to some extent from each other; and the hair was abundant. All of the lymphatics of the neck were greatly enlarged. On a superficial inspection there was an apparent lack of the thyroid gland, but a more careful examination, especially during the act of deglutition, showed that the left lobe and the isthmus could still be distinctly felt, although the right lobe seemed to be wanting. No trace of the thymus gland could be detected. The clavicles were markedly enlarged, especially at their sternal extremities. The ribs were also greatly enlarged, and commencing kyphosis and a peculiar bulging shape of the chest, due to the costal hyperplasia, could be observed. There was comparatively little adipose tissue anywhere. The bones of the

arm and forearm also showed enlargement of the extremities, and there was some reason to believe that slight lengthening of the shaft had also taken place. The hands were also immensely enlarged, although there was no deformity of the nails, as has been noted in some of the other cases of akromeglia. The muscles everywhere were flabby and atrophied. The skin was markedly hypertrophied, but remained for the most part soft and pliant.

The same general condition of affairs was found in the pelvis and lower extremities. The feet were enlarged even more than the hands, being simply colossal in size, and in the legs there was also enormous hyperplasia of the epiphyseal regions and of the patellæ. It was noticed that there was marked hyperæsthesia in all the hypertrophied parts; even slight pressure causing the patient to wince. As regards the internal organs, a careful ophthalmoscopic examination failed to reveal the presence of any organic disease. Repeated chemical and microscopic examinations of the urine showed no evidence of any kidney trouble, and the red and white corpuscles of the blood were both found to be normal in number and appearance; although to the eye the patient seemed anæmic. The heart and lungs, and all the other organs, as far as could be ascertained, were entirely normal. The appetite was fairly good, but the bowels showed a tendency to obstinate constipation.

The electrical examination showed some departures from the normal. The resistance of the skin to the faradic current was enormous. Otherwise the cutaneous sensibility was not diminished. As regards the galvanic current, there was considerable diminution of electrical excitability, which was most marked in the peronei of both lower extremities. Still, there was no evidence of any degeneration going on in the nerves, and the want of electrical excitability could well be explained on other grounds. There was evidence of well-marked psychical degeneration in the patient, who was described as having been a bright and lively girl, but was very dull and apathetic.

Dr. Adler then made some general remarks on akromeglia, founded on the observations of European authorities. In most particulars, he said, this case corresponded very closely with those met with abroad, though there was one feature which was peculiar to it alone, viz.: the widespread hyperplasia of the lymphatics. As regards the post-mortem appearances in this affection, Klebs was the only author who had made anything like a satisfactory report. He had found a general hyperplasia of the connective tissue and marked proliferation of the blood-vessels. There was also enlargement of the various nerves, especially the ganglia of the sympathetic. In the brain he found well-marked hyperplasia of the hypophysis cerebri, and the question naturally arose whether there

was any connection between the enlarged hypophysis and the enlargement of the nerves. Klebs was inclined to attribute the disease to the proliferation of blood-vessels, but this was purely fanciful and speculative, and at present the true pathology remains shrouded in profound mystery. As regards the matter of prognosis, this was not particularly bad so far as life was concerned. In Europe two of the cases which had been first observed as long ago as 1867 were still alive. In some of the cases there were abnormal conditions of the heart. In most of them the thyroid gland was diminished in size or apparently wanting altogether; but in two it was markedly hypertrophied and was no doubt diseased. Amenorrhœa was a constant characteristic of the disease.

Dr. W. R. Birdsall expressed the great pleasure it afforded him to see this case, the first of its kind ever recorded in America. He did not think he could throw any light on the pathology; though there seemed to him to be some mysterious connection between akromeglia, myxœdema and extirpation of the thyroid. He said that he had at present under observation a young girl suffering from amenorrhœa who had developed some enlargement of the extremities of the phalanges of the hands, and to a less extent of those of the feet. It might possibly be an incipient case of akromeglia, but it was as yet too early to form a definite opinion in regard to it. As regards the electrical reactions in Dr. Adler's case, he thought that we ought to be very guarded in drawing conclusions.

Dr. Adler said that it seemed to him that the hyperplasia in and about the nerves might of itself offer a sufficient explanation of the diminished electrical excitability.

Dr. A. L. Carroll thought that profound gratitude was due Dr. Adler for the most admirable clinical demonstration which he had given of his unique case. Ever since he had first seen an account of this new disease in the journals he had been waiting in the hope that some one would find a specimen of it in this country, and it now afforded him extreme pleasure to have the opportunity of seeing the first case reported.

The question of treatment having been suggested, Dr. Adler stated that, in the total absence of knowledge of the cause of the disease, all treatment, so far as interference with its progress was concerned, was without avail. The patient was simply kept in bed and her functions regulated as well as possible. The attacks of migraine to which he had referred could always be sufficiently combated with antipyrin.

Dr. J. Lewis Smith then presented an interesting case of infantile hemiplegia accompanied with epilepsy and characterized by marked spastic contractions and slight athetoid movements in the fingers. In connection with it he read a communication concerning the case prepared, at his re-

quest, by Dr. M. Allen Starr, the well-known neurologist, in which the latter gave a *résumé* of some of the latest researches by Seeligmeler and other authorities in regard to such conditions. In it he stated that all recent writers mention athetosis as a frequent complication of spastic infantile hemiplegia connected with epilepsy. On the invitation of Dr. Smith Dr. Birdsall then gave a clinical demonstration of the case and made some remarks upon it, in the course of which he stated that there was no doubt a destruction of tissue in the cortical areas, by reason of which the impulses from the brain were transmitted irregularly, and not in a coördinate manner. The last paper of the evening was by Dr. Daniel Brown, on "The Arrest of Secretions in the Eruptive Fevers," and this led to a valuable discussion by a considerable number of speakers.

P. B. P.

BOOK REVIEWS.

PTOMAINES AND LEUCOMAINES, or the Putrefactive and Physiological Alkaloids. By VICTOR C. VAUGHAN, Ph.D., M.D., and FREDERICK G. NOVY, M.S. Philadelphia: Lea Bros. & Co. 8vo, pp. 316.

The subject of this volume is one of the greatest interest, for without doubt our knowledge of the causation of disease can be greatly increased by a more detailed knowledge of it. The full importance of ptomaines and leucomaines has been so recently appreciated that as yet many of the facts known to us are so scattered and isolated that a scientific appreciation of them is impossible. The present work will undoubtedly aid much in diffusing a knowledge of these substances in the profession, and in placing before the searcher after new facts all that pertains to the subject up to the present time.

The volume is devoted almost exclusively to the chemistry of these alkaloids. One can not but be impressed with our lack of knowledge of the physiological action of these alkaloids. This is a field widely open to the investigator, and one from which a rich harvest can be gathered.

No one in our country is better adapted to produce a work upon this subject than Professor Vaughan, for he has become an authority upon it from his original investigations into it, especially from those in regard to tyrotoxin, which he discovered.

THE APPLIED ANATOMY OF THE NERVOUS SYSTEM. By AMBROSE L. RAMSEY, A.M., M.D., etc. Second Edition. 8vo, pp. 791. New York: D. Appleton & Co. 1888. Chicago: W. T. Keener.

This work will be found exceedingly useful by all who come frequently in contact with those suf-

fering from disease of the nervous system. Its object is to aid in the anatomical diagnosis of such diseases. It is unusually complete in its treatment of the subject. Numerous diagrams and illustrations have been introduced in order to make explanations clear.

The present, although called a new edition, is practically a new book. It is much larger and for the most part newly written. If we were to make any criticism upon the book, it would be to urge the author to condense the subject-matter. So much of the substance of the work deals with the physiology of the nervous system that the title is somewhat misleading as regards its scope.

MISCELLANEOUS.

THE PREVENTION OF TUBERCULAR DISEASE.—The resolutions adopted by the Congress for the Study of Tuberculosis which assembled recently in Paris afford striking proof of the change which has come over popular pathological theories as to the etiology of this ubiquitous disease. It is not many years since the communicable nature of tuberculosis, and even the specificity of the process, were generally denied; now we find these two propositions taken as axiomatic, and important practical conclusions drawn therefrom to form the basis for legislation. In a courageous willingness promptly to accept the logical consequences of scientific discoveries, the French have frequently set an example which can only excite our admiration. Public opinion in this country and in our colonies moves more slowly, and the respect for vested interests leads to the perpetuation of practices which are injurious not only to the public health but, in the long run, to those interests which it is intended to conserve.

The first resolution led up to a *coup de théâtre*, no doubt carefully prepared beforehand. This resolution, which was adopted at an early sitting of the Congress, declared:

"That every means, including the compensation of owners, should be taken to bring about the general application of the principle that all meat derived from tubercular animals, whatever the gravity of the specific lesions found in these animals, should be seized and totally destroyed."

Now for the last three years the French Government has had in contemplation the advisability of applying the provisions of a law for the prevention of the spread of the contagious diseases of animals, passed in 1881, to the case of tuberculosis, and the necessary decree was actually signed by the President of the Republic during the session of the Congress. This decree is in many respects a remarkable document; here we are only concerned with its sanitary significance. It provides that every ox, cow, or other animal of the bovine species found to be suffering from tuberculosis shall be isolated, and that the veterinary inspector shall be present when it is slaughtered, and make a report on the *post-mortem* appearances. The meat is to be condemned if the tubercular lesions are generalized; that is to say, if they are not confined to the viscera and their lymphatics, or if, being confined to the viscera, the greater part of one organ has been invaded, or if the serous surface is affected. The sale of the milk of tubercular cows is absolutely prohibited, and it can only be used for feeding animals after it has been boiled. No provision exists for compensating the owners of condemned animals, and the possibility of creating a fund for this purpose is at present much discussed. One suggestion is to require an owner to provide himself with a

"certificate of origin" for each animal which he possesses. It has been calculated that a fee of one franc would be sufficient to raise a fund large enough to compensate all owners, while the existence of the certificate would greatly facilitate the investigation of the source of epizootic outbreaks. Another plan which has been suggested is compulsory insurance.

Two other resolutions adopted by the Congress at the end of its last session are interesting as showing the direction in which public opinion is advancing. One of these was:

"That dairies ought to be subjected to a special system of inspection, with the object of ascertaining that the cows are not suffering from contagious diseases capable of being communicated to man, and that this system of inspection ought to be extended to all other establishments of the same class."

The full significance of this resolution will be perceived when it is remembered that in France tuberculosis is now included among the diseases legally recognized as communicable. The other resolution was to the effect that steps ought to be taken to spread among the public, especially in country districts, a knowledge of simple means of avoiding the danger incurred by the ingestion of the flesh or milk of tubercular animals, and of proper methods of disinfecting the excreta of phthisical patients, and objects contaminated by them.

A large number of papers on the nature and treatment of tuberculosis, and on the influence of heredity, were presented to the Congress, and the general scope of the discussions was sufficiently indicated by the letters of our Paris correspondent at the time. Without seeking to detract from the value of those clinical and pathological contributions, it yet appears that by far the most important work achieved by the Congress was the adoption of the resolutions which have been mentioned above. They deal, indeed, only with one element in the etiology of tubercular disease, but that not the least influential in its action, while practically it is the most important because its operation is most under control.—*British Medical Journal*.

MEDICAL EXAMINING BOARD OF VIRGINIA.—We are glad that THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, of September 8th, editorially reviews the record of this Board up to a recent date, and very warmly commends its labors to the consideration of the profession. It advocates the establishment of like Boards in other States, and shows by an analysis of the Reports of the Virginia Board what good has been done the profession. It naturally drifts upon the influence of such Boards in leading to a higher education by the Medical Colleges of this country, and severely reflects upon the conduct of those connected with a college who oppose the effort of the profession to bring about a higher standard for medical graduation. Many sensible, strong points are made in that editorial which we regret not having space to reproduce in our pages.

In the issue of this official organ of the American Medical Association for September 22d, we find a cordial approval of the editorial referred to by Dr. William Osler, of Philadelphia, an eminent Professor in one of the Philadelphia Medical Colleges. With reference to the Report of the Medical Examining Board of Virginia, he correctly says: "To the schools, such a report is as the handwriting on the wall, 'Mene, mene, tekel upharsin';" to the profession of every State, an encouragement to persevere in the good work of organizing Medical Boards."

Such sentiments expressed by those practically possessed of authoritative utterance go far to encourage the organization in other States of Medical Examining Boards similar to those in Virginia and North Carolina. They also help to encourage the profession in these two States to keep their Boards up to the high standard of excellence to which they have attained. There has been nothing in the conduct of the Virginia Board—nor, as to that matter,

in the North Carolina Board—to cause the profession to regret their selection of its members. With very rare exceptions, the few objectors to the Virginia Board are easily tracked to connection with or personal interest in some medical college.—*Virginia Medical Monthly*.

CLIMATE FOR CONSUMPTIVES.—PROFESSOR KNIGHT, of the Harvard Medical School, read a paper not long ago before the Boston Society for Medical Observation, on the choice of a climate for consumptive persons. Some of the ideas advanced may be of value to our readers. Patients who have cavities in their lungs, and those who have severe hectic symptoms, especially if they are poor, should not leave home, nor should those who have any acute affections of the lungs do so during the acute stage of the disease.

If, in the early stages of consumption, complete cure can be hoped for, a climate is to be chosen in which the patient can remain throughout the year. If, on the other hand, nothing more than temporary relief and some prolongation of life are to be expected, a mild winter climate is recommended.

While consumption presents a variety of phases and conditions, making it impossible to lay down fixed and invariable rules, it may be said that in general the first object aimed at by a change of climate is to enable the patient to live an active outdoor life, for the purpose of assisting nutrition of the lungs, and this is best attained in situations at an altitude of 4,000 to 8,000 feet above the sea level.

Dry and pure air, a good proportion of clear days, and a rarefied atmosphere which compels greater activity of the respiratory organs, make a mountainous country the best for this purpose. Those for whom high altitudes may be recommended are:

1. Patients who show no more alarming symptoms than a morning cough and expectoration. For them Colorado and New Mexico are suited.

2. Those who have some consolidations of the lungs, but no cavity, nor any serious constitutional disturbance. For persons who exhibit such disturbance—a high pulse and temperature—a lower altitude should be tried first; say the pure regions of Southern Georgia for the cold months, and then, if there is improvement, a more elevated region.

3. Cases in which there is early and frequent hæmorrhage, without much other evidence of disease. The mountains are peculiarly suited to persons of this class; and

4. Persons who are recovering from acute diseases of the lungs. But in these cases great care should be exercised, lest the steps taken to ward off permanent pulmonary disease have an evil effect upon other organs weakened by sickness.

Patients in whom tubercular disease has invaded the larynx should on no account be sent to high altitudes. They need mild and moist climates, like that of Southern California. Moreover, those who have a tendency to irritability of the bronchial tubes, and nervous persons, do not do well in high altitudes. A very high altitude should not, as a rule, be recommended for any patient over 50 years of age.

A DISGRACEFUL JAIL.—In the last quarterly Report of the Illinois State Board of Health DR. RAUCH says: On the 14th of July I made an inspection of the Tazewell county jail, at Pekin, concerning which I subsequently wrote to the sheriff in unqualified condemnation of the structure. That portion of it in which the male prisoners are confined consists chiefly of a room 27x28 feet, and 8½ feet high; this is divided by heavy iron bars into eight cells and, with its stone floor resting directly upon the ground, resembles a cage for wild beasts rather than anything designed for human occupancy. The only ventilation is by three apertures, 27x30 inches, fully one-third of the space obstructed by heavy iron-work. These aper-

tures are situated in the upper part of the wall, thus still further reducing their ventilating value, which is only nominally aided by two so-called air-shafts. Openings through the stone flagging in corners of the room communicate directly with shallow holes in the ground which constitute the only cloacæ. To empty these it is necessary to tear away the outside wall and then rebuild. The result may be imagined, but not described. Diarrhoeas and low continued fevers prevail among the prisoners confined in this damp, noisome stone dungeon. If this jail is the result of a studied effort to outrage every law of health, humanity and decency, the effort is a disgraceful success.

THE WHITECHAPEL MURDERS.—Dr. Bloch, a member of the Austrian Reichsrath, has called attention to certain facts which may throw a new light on the Whitechapel murders. In various German criminal codes of the seventeenth and eighteenth centuries, as also in statutes of a more recent date, punishments are prescribed for the mutilation of female corpses, with the object of making from the extracted organs the so-called "diebslichter" or "schlaflichter"—"thieves' candles" or "soporific candles." According to an old superstition, the light from such candles will throw those upon whom it falls into the deepest slumbers, and they may, consequently, be useful to thieves. At the trial of a notorious German robber in 1810, it was discovered that a regular manufactory had been established by gangs of thieves for the production of such candles. That this superstition has survived among German thieves to the present day was proved by a case tried at Biala, in Galicia, as recently as 1875. In this the body of a woman had been found mutilated in precisely the same way as were the Whitechapel victims.

THE CINCINNATI POLYCLINIC was organized on October 31. It was first opened last Spring as a voluntary clinic, but it grew so rapidly that the idea of the present enlarged undertaking was soon developed. It is the first post-graduate medical school in Cincinnati and the fifth in the United States, there being two in New York, one in Philadelphia, one in Chicago and one in St. Louis. The present enterprise starts off most auspiciously, and has secured a registration of students in advance. The students are restricted entirely to graduates in medicine. The Faculty was organized with Dr. Chas. A. L. Reed, Professor of Diseases of Women, as Dean, and the following additional Professors: General Medicine, Drs. Kemper and E. W. Mitchell; Surgery, Drs. Wallace Neff and Longstreet Taylor; Diseases of the Eye, Dr. Robert Sattler; Gynecology, Drs. R. B. Hale and Edwin Ricketts; Diseases of the Skin, Drs. A. Ravogli and M. Ricketts; Diseases of Children, Dr. H. W. Rover; Diseases of the Throat, Drs. A. B. Thrasher and Boylan. Dr. Rufus B. Hale was elected Treasurer and Dr. Taylor, Secretary.

A GOOD MOVE RELATING TO POULTRY SELLING.—The State Legislature of Massachusetts has enacted the following: 1. No poultry, except it be alive, shall be sold or exposed for sale until it has been properly dressed by the removal of the crop and entrails, when containing food. 2. Whoever knowingly sells or exposes for sale poultry contrary to provisions of section 1 of this act shall be punished by a fine of not less than five nor more than fifty dollars for each offense. The Boards of Health in the several cities and towns shall cause the provisions of this act to be enforced in their respective cities.

It would have been better, surely, to have omitted the words "when containing food," in the first section. The entrails always contain either food or the excrete refuse of it, containing numberless microbes ready to set up putrefactive or diseased processes.—*The Prophylactic*.

DR. JAMES CRANE, of Brooklyn, who died on November 1, was an old and honored physician of Brooklyn. Forty-three years of his life were passed in Brooklyn, so

that he belonged to the earlier professional circle so few of whose members survive. His practice was large. He was conspicuous in the medical societies and active in the hospitals, and he served as Brooklyn's representative in the Metropolitan Board of Health, and later as President of the Board of Health of this city. Through disability rather than because of growing age he had in recent years withdrawn from general view, but he will be remembered and regretted by many families who knew and esteemed him privately, by his professional associates and by citizens who recall his skillful and faithful performance of public duty.

SUED FOR MALPRACTICE FOR GIVING CHLOROFORM IN ECLAMPSIA.—Dr. J. J. Leppa, of New York, has been sued for malpractice. The plaintiff, an Italian woman, says that her brother, the patient, a boy of 15, went to work at his trade in a silk-twine and braid factory in the morning, and came home at noon complaining of a pain, and was shortly after seized with convulsions. She called Dr. Leppa, who gave him chloroform and ether. The boy had six successive convulsions. The anæsthetic brought him out of each, but at the end of the sixth he died. It is a well-known fact that chloroform is one of the best and most approved drugs in eclampsia; and this case seems to be a particularly unjust one.—*The Medical Record*.

SMALL-POX IN PHILADELPHIA.—A dispatch of November 3 says: Upon information furnished by a physician the local health authorities late yesterday sent to the Municipal Hospital a woman named Caroline Gabriel, who was suffering from small-pox. She reached New York last week on a Bremen steamer and came on to this city by railroad. Health Officer Patterson was to-day emphatic in his denunciation of the negligent conduct of the New York health authorities, as, from the condition of the woman when first seen by the physician who reported her case, she must have contracted the disease before leaving Bremen.

THE WESTERN BUREAU OF PRESS CLIPPINGS is an agency to furnish any one with newspaper and general periodical clippings upon any subject. It was organized by Mr. F. L. Hagadorn, an experienced journalist, whose address is Room 2, *Times Building*, Chicago. The subscriber has only to indicate what kinds of clippings he wishes, and they are sent regularly. It is a labor-saving institution for all classes of men, and as such deserves success.

THE SWEATING SYSTEM IN HOLLAND.—A Committee of the Dutch Chamber has recently reported that in that country the average factory day is from 13 to 14 hours, while the operatives work often 18, 24, and 36 hours at a time. The Committee also reports that infant mortality is increasing, technical improvements are neglected, and the inventiveness of workingmen destroyed.

THE BACTERIA OF SEA-PHOSPHORESCENCE.—Professors Pflüger and Tilanus, it is stated, have discovered the bacteria that produce the phosphorescence of sea fish, and have cultivated them by Koch's method. In the dark the glass slide containing them is seen to be thickly strewn with luminous points.

PENALTY FOR HANDLING INFECTED CLOTHING.—The magistrates of Bootle, England, have recently fined two persons for removing infected clothing. In one case a man removed infected articles from the house in which his child had died of scarlet fever; in the other a poor woman pawned a quilt to buy food for her sick son.

A CREMATORY IN TROY.—The new crematory to be erected in Oakwood Cemetery, Troy, the gift of Mr. Wm. S. Earl, will probably cost \$150,000. It is to be of granite, 136 feet long and 70 feet wide, and will be a mortuary chapel and retort.

A RESEARCH LABORATORY for the Royal College of Physicians of Edinburgh has been recently completed. Cuts showing the arrangement of the rooms are given in the *British Medical Journal* of September 15.

SIR MORELL MACKENZIE'S BOOK, "The Fatal Illness of Frederick the Noble," has appeared in this country. It is published in America by Brentano, of New York, Washington and Chicago.

MEASLES have become epidemic at Wellsville, Ohio, and of such a malignant type that great alarm exists. In East Palestine alone over 100 school-children are down with the disease.

LIABILITY OF PARENTS FOR CHILDREN OVER AGE.—An English judge has recently decided that a parent who calls a physician to see a child over age (of age) is not liable for the doctor's bill.

CHILDREN IN FACTORIES.—The Assistant Inspector of Workshops and Buildings, of Findlay, Ohio, has found children eight years of age working in glass-making houses.

THE PUBLIC SCHOOLS of Athens, Ohio, are said to be closed on account of prevalence of diphtheria in that place.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from October 27, 1888, to November 2, 1888.

Col. Elish I. Bailly, Surgeon, and Capt. John J. Cochran, Asst. Surgeon, detailed for duty on Army Retiring Board to meet at San Francisco, Cal., for the examination of such officers as may be ordered before it. Par. 3, S. O. 253, A. G. O., Washington, October 30, 1888.

Major John H. Bartholf, Surgeon U. S. Army (Ft. McIntosh, Texas), is granted leave of absence for one month, on surgeon's certificate of disability. Hdqrs. Dept. of Texas, San Antonio, Tex., October 10, 1888.

Capt. Daniel Weisel, Asst. Surgeon U. S. Army, died at Ft. Sill, Ind. Ter., October 30, 1888.

By direction of the Secretary of War, Capt. William H. Arthur, Asst. Surgeon, is relieved from duty at Ft. Bowie, Ariz., and will report in person to the commanding officer, Ft. Bayard, N. Mex., for duty at that post. Par. 21, S. O. 250, A. G. O., Washington, D. C., October 26, 1888.

James D. Glennan and Alfred E. Bradley, appointed Asst. Surgeons U. S. Army, with rank of First Lieuts., to rank from October 29, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 3, 1888.

Medical Director A. L. Gihon, ordered to Naval Hospital, Brooklyn, N. Y.

Medical Director John T. Taylor, detached from Naval Hospital, N. Y., and to Examining Board.

PROMOTIONS.

Medical Inspector Adrian Hudson, promoted to Medical Director.

Medical Inspector Michael Bradley, promoted to Medical Director.

Medical Inspector Newton L. Bates, promoted to Medical Director.

Surgeon T. Woolverton, promoted to Medical Inspector.

Surgeon C. H. White, promoted to Medical Inspector.

Surgeon G. W. Woods, promoted to Medical Inspector.

Surgeon F. L. DuBois, promoted to Medical Inspector.

Surgeon G. H. Cooke, promoted to Surgeon.

P. A. Surgeon Howard Wells, promoted to Surgeon.

P. A. Surgeon D. N. Bertolette, promoted to Surgeon.

P. A. Surgeon J. H. Gaines, promoted to Surgeon.

P. A. Surgeon Ezra Z. Dexo, promoted to Surgeon.

P. A. Surgeon F. B. Stephenson, promoted to Surgeon.

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ORIGINAL ARTICLES.

OCULAR TROUBLES AS INFLUENCED BY NASAL DISEASE.

Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Ninth Annual Meeting of the American Medical Association, May, 1888.

BY LEWIS H. TAYLOR, M.D.,
OF WILKESBARRE, PENNA.

"There is no new thing under the sun" has been truly said many years ago, and its application to the various papers read from time to time before this and similar Associations is in the main correct. For, while looking from a different point of view, we may sometimes seem to present certain subjects in new lights, it is nevertheless difficult for us to bring forth matter pathological and therapeutical that has not at some point been touched upon, and possibly ably handled, by others of our professional brethren.

When I first began the consideration of this subject, being led thereto by the perusal of one article, and the treatment in private practice of a number of cases that presented points of interest bearing directly in this line, I was not aware that much had been written upon the relation of ocular and nasal diseases. Had I been familiar with the numerous interesting and valuable contributions to this department of medical literature that have since fallen under my notice I should have hesitated somewhat before being willing to present to you a paper upon a subject already treated so ably and thoroughly by others.

Yet, after all, the field is comparatively a new one, and I have thought it might not be out of place to present, or re-present, if so it be, a few points for discussion, and by the relation of a few cases from my own experience call your attention again to a too much neglected field of our practice.

I will not weary your patience nor occupy your time with a review of the anatomical structures, so familiar to you all, of the nose and the eye. The close connection between the two is apparent to even the superficial observer, and that the diseases of the one might readily be affected by those of the other needs to the thoughtful mind nothing more than the mere statement to carry with it conviction of its truth.

We have all of us at some time had certain puzzling cases, with annoying ocular symptoms that would not yield readily to our ordinary treatment. It may have been certain forms of phlyctenular conjunctivitis, keratitis, trachoma, irritable, dry or sticky lids, with harsh, rough, uncomfortable feeling, some forms of blepharitis, injected lids with enlarged marginal glands, photophobia with neuralgia, or other forms of disease with pronounced ocular symptoms, that we have treated as we do ordinary cases until our failure to influence their course has led us, if we have been wise in our day and generation, to seek the cause of the trouble outside of the eye itself, and we have found it quite often in the adjacent anatomical structures. Or it may be we are consulted by persons without apparent ocular lesions who complain simply of inability to use the eyes any length of time with comfort. A bright light is annoying, the printed page painful, and any continuous effort burdensome. A feeling of itching, fullness, lachrymation upon using the eyes, frequent headaches and other prominent symptoms are present; but when we make a careful examination we find vision normal, both near and distant, conjunctiva not especially swollen, perhaps a slight injection, ophthalmoscopic appearances good, and in fact we can detect nothing in the eyes to cause the troublesome symptoms. An examination of the nasal chamber reveals chronic rhinitis and very frequently hypertrophy of the membrane covering the lower and middle turbinated bones or a deviated septum causing an irregular enlarged passage on the one side, with an almost occluded one on the other. The connection between the eye and nose by means of the lachrymal duct is a direct one, and the lining membrane of the nose being thus continuous with that of the eye, we can readily understand how disease of the one might *pass over*, as we may say, to the other. Thus when a swollen mucous membrane with acrid discharge extends to the tear duct, partly occludes it, causes blenorrhoea of the lachrymal sac, and irritating conjunctivitis resulting therefrom, we can readily perceive the cause.

But there are other causes not so apparent. The tear duct is normal; it is patulous, there is no disease communicated from the nose to the eye directly, yet all the phenomena are here. Even

rhinitis is wanting. These are the reflex nasal phenomena so ably discussed by Dr. John N. Mackenzie and others. Sometimes the diagnosis by an inspection of the nose is apparent, but in others it is by no means so easy, and it may only be revealed by a careful and systematic treatment of the nasal difficulty. In my experience, however, the cases have been very few, of those coming under this category, in which a careful examination did not reveal the nasal lesion.

These cases are many of them subject to great variation in the intensity of the symptoms, but they are mainly characterized by lachrymation, injected, swollen conjunctiva, frequently passing into granular lids of the soft watery oedematous variety. There is generally irritation of the meibomian glands, with frequent perversion of the cilia, with yellowish secretion along the edges of the lids. Itching of the eyelids is frequently present. Photophobia not always. These are the patients that go from one physician to another improving slightly under local treatment, but readily relapsing into their old condition which seems aggravated by each additional cold they take. The oculist who studies and treats nothing but the eye will generally fail to give relief because the source of the trouble has not been detected by him and too often not even suspected.

The successful issue will depend mainly upon the proper management of the nasal affection, supplemented of course by a due consideration of what may be needed in the way of soothing applications to the eyes themselves; neglecting, by no means, general hygienic measures and systematic treatment when indicated. I desire here to relate the history of a few cases out of many that have proved interesting to me in the special study of these disorders.

Case 1.—Mrs. W. S., consulted me Dec. 17, for a chronic affection of the eyes which she and her husband declared had lasted nearly thirty years. It was also stated that she had been treated at various times by skillful physicians, also by quacks and old women, but without any permanent good resulting from the same. Vision in OD. $\frac{10}{cc.}$ OS. $\frac{3}{cc.}$

This low vision being largely due to the presence of old corneal opacities. Her eyes are constantly weeping. This lachrymation is increased by any attempt at examination. Cornea is affected; it is rough and the epithelium in some places is apparently destroyed. Old opacities in both. Finely granular lids, cilia considerably affected and blepharitis existing in both eyes, with here and there quite large yellowish spots around the roots of the cilia. Altogether she seemed a most unpromising case for treatment. I gave her at first, atropia and weak zinc sulphate solution, prescribing also an alterative, and recommending the use of hot water to the eyes daily.

The treatment being continued in this direction

for a few days only, but with no apparent effect, I made a careful examination of the nose, which revealed the right side almost occluded by swollen membrane over the turbinated bones. There was a discharge of offensive yellowish material and the same had a constant tendency to drip in the throat. She had great difficulty also in breathing through this side of the nose. Vigorous treatment was at once instituted, and from this time on was directed mainly to the nasal condition. I used a spray of Dobell's solution for the purpose of cleansing, and applied the galvano-cautery freely to the enlarged turbinated bone. The left nostril was affected also but in less degree than the right. The cautery was repeated several times, the loop being more frequently used than the knife.

She improved rapidly. In one month the left eye was quite well and the right greatly improved. Early in April I removed with the cautery loop a polypus which had appeared in the right side during a cessation of treatment. The granular lids also were treated, chiefly by copper sulphate, alternating with tannin and glycerine. The improvement, as stated, was rapid and although the old opacities remain, and she is not entirely well, yet a very satisfactory condition is obtained from what seemed a very unpromising case. As a recent test V. in OD. $\frac{20}{cc.}$ OS. $\frac{20}{XL.}$

Case 2.—Miss B., æt. 20, came to me in July, 1886, for treatment of granular lids and partial pannus, with watery rough cornea, especially in OD. I treated her for several months with silver nitrate, glycerole of tannin and various other procedures, be it said to my discredit, without treatment of the nose. She improved somewhat, so that I fitted her with glasses OD. + 1 cy. ax. 105°. OS. + 1.25 cy. ax. 75°. These gave some relief and she left town for a time.

The trouble was very obstinate and she returned in much the same condition as before. This was one of the cases in which inspection of the nares did not reveal rhinitis nor any considerable amount of fetid catarrh. But there was plainly shown an enlargement of the lower turbinated bones covered by almost normal membrane which pressed against the septum of the left side. Pressure readily lessened the swelling but caused increased lachrymation, as did any treatment of the nose. In the Spring of 1887 I began treatment of the nasal difficulty in connection with the eye treatment, cauterizing freely the swollen turbinated membrane. The improvement was marked and rapid; OD. became entirely well in a short time, and OS. much better than it formerly had been. She left town for a time and lately has returned with a relapse in OS. which was not entirely well at the time of leaving. This is improving nicely under treatment.

Case 3.—Mr. L., æt. 25, V. OD. $\frac{15}{XX.}$ OS. $\frac{15}{XV.}$ He

has granular lids, especially in OD., which has pannus over about one-third of the cornea. The lids are velvety, granular and thickened. The meibomian glands are affected. He cannot possibly keep the right eye open. A gush of scalding tears follows every effort at examination. He has had this trouble for many years, and was treated with some relief by a physician seven or eight years ago.

Inspection shows hypertrophy of the nasal membrane on both sides, the right being almost occluded. Thinks he has had catarrh many years. Says his throat feels as if he had something in it all the time. He has granular pharyngitis (Oph.). OD. dimly seen, refraction about normal, but the fundus is greatly blurred. The upper part of cornea is blurred with pannus encroaching on the pupil. OS. nearly normal.

I advised daily treatment with spray to nose and throat, and glycerole of tannin to the lids with a collyrium of zinc sulphate to be used at home. After one week's treatment I advised atropia and bichloride solution at home, and I cauterized freely the right side of the nose.

Pupils dilated readily and I discontinued atropia. In another week he was much better. The cautery was applied two or three times and at the end of the month he was able to discontinue the bandage and resume his work. This patient is still under treatment but is improving rapidly.

Case 4.—Mr. C. L., æt. 22, OD. V. $\frac{20}{XX}$ OS. $\frac{20}{XX}$. Jr. I 5"—16" in each. No As. He comes in reference to his eyes. The lids are very finely granular, scarcely perceptible. He cannot use his eyes any length of time without pain and blurring. They water readily, and at other times have a hot, dry feeling. Oph. about normal in each. There was nothing in the condition of the eyes to suggest so much subjective trouble, but an examination of the nose revealed at once the source of the difficulty. He has nasal catarrh, which has become quite offensive. Membranes are swollen and passages partly occluded. I advised a weak solution of silver nitrate to the lids and spray daily to the nose. After a few days I applied the cautery to the left nostril. He has been under treatment but a short time but the improvement is already manifest.

From a perusal of these cases it is readily seen that in treatment much dependence is placed upon the careful but thorough use of the galvano-cautery, the application of which is rendered painless by the use of cocaine. Now, by thorough use, I do not necessarily mean the searing of the whole surface of both septum and sides of the nose, but the repeated application with small cautery knife or loop to a limited surface until at least a free breathing space is obtained and the ocular trouble removed. I have generally used the flat cautery knife, though I frequently prefer the loop, allow-

ing the wires to sink into the tissues, hoping by the healing of the eschar to obtain contraction of the tissues giving a free passage without destroying so large a surface of membrane.

I do not mean to say that every case of nasal disease will give rise to ocular troubles, but the chronic swelling of the membrane and the cavernous bodies underneath by which the turbinated bodies are pressed against the septum is very apt to give rise to reflex symptoms elsewhere. Dr. J. M. Mackenzie has shown that there are sensitive areas in the nose, especially over the lower turbinated bone, the irritation of which produces reflex symptoms in the eye, larynx, etc. We have all noticed how readily lachrymation is produced in certain individuals by the slightest touch of the nasal membrane, and it is readily seen that the constant pressure of a deviated septum against such must result in annoying and persistent symptoms.

The indication plainly is to get rid of this enlarged sensitive area. In addition to the cautery I have found in many cases good results from the use of nitric acid applied upon a cotton carrier as recommended by Dr. Lefferts, of New York. I have under my care at present a lad whose mother in bringing him to me for his first examination stated that he had used bottle after bottle of cocaine and it had done him no good except for the moment. This tallies with my experience. Cocaine is useless in such cases except for temporary relief.

A word as to prognosis. While I have in many cases seen rapid and satisfactory progress toward recovery as the result of the above mentioned treatment, I cannot report, as do some of our brethren, the healing of these chronic cases in a few days, and with but one or two applications. I believe the majority of them will require protracted treatment lasting for weeks, and even months, to effect permanent cures, with many relapses and discouragements. The most important point is the early recognition of such cases, and then their early and systematic treatment directed especially to the nose and not to the eyes.

The careful and painstaking physician will always examine thoroughly the nose in connection with ocular troubles, and those of us who are none too careful should at least receive sturdy hints to pursue our investigations further, when we see the ocular difficulty fail of improvement under ordinary local treatment.

SIXTEEN INCH CHEST EXPANSION.—The average chest expansion, as we know, is but little more than three inches; six inches expansion is very rare. The New York papers tell of a man in Brooklyn, an Irishman, 5 feet 10 inches high, and 45 years of age, who can expand his chest sixteen inches.

SURGICAL TREATMENT OF EMPYEMA IN CHILDREN.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May 10, 1888.

BY D. A. K. STEELE, M.D.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY AND CLINICAL SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, CHICAGO, ILL.

In presenting for your consideration the subject of the surgical treatment of empyema in children, I am sure that no apology will be necessary, when we consider that more than half the cases of empyema recorded occur during the first decade of life; and that more errors of diagnosis are made than in probably any other thoracic affection.

Definition.—By empyema we mean a collection of pus in the pleural cavity, the abscess bounded upon one side with the soft, receding, compressible lung, and upon the other side with the firm unyielding bony chest wall. And in the consideration of its surgical treatment, we must remember the ever-present surgical maxim, that "wherever we have a pus collection, it must be evacuated in the speediest, safest, and most thorough manner."

Causes.—It is not my purpose in this paper to enter into a consideration of the various causes giving rise to empyema, but I may state that in the majority of cases, it is my belief that a purulent pleuritis is due to auto-infection of a more or less limited area of the inflamed or damaged pleura through the medium of the general circulation; the pus microbe thereby gaining entrance and commencing its destructive action upon tissues that otherwise would only be the seat of a simple pleuritis. Other methods of infection are the use of unclean aspirating needles; rupture of a bronchus; extension of a septic pneumonia; secondary infection from the primary foci in some other point of the body; tubercular infection, etc.

Symptoms.—The symptoms, where we rely upon clinical evidence alone, are not sufficiently pathognomonic to be diagnostic. It is easy to determine by physical examination that we have a pleural sac distended with fluid, but its exact nature can only be determined by the introduction of a hypodermic needle (better of large size). If, following the usual symptoms of an acute pleuritis we have chills, fever, hectic, diarrhoea, and sweating, we are reasonably certain of our diagnosis without the aspirating needle. If these symptoms are accompanied by localized cedema or bulging of the intercostal space, usually the 5th in the mammary line, there is almost absolute certainty of pus in the pleura. The diagnosis may be made as early as the fourth day of the disease, although usually it is delayed until the second week or later. All cases of pneumonia that are tardy in undergoing resolution should awaken a suspicion of empyema. I have seen a

number of striking cases of error in diagnosis in cases of this character. Secondary infection of the pericardium is a fatal complication in a number of cases running a rapid course. A striking example of this mode of termination was recently detailed to me by Prof. C. W. Earle.

Empyema, if left to itself, may terminate in recovery in one of three ways according to L. Emmet Holt: (1) by spontaneous absorption of the purulent effusion; (2) by evacuation through the bronchus; (3) by opening externally through the intercostal muscles; but when left to nature the mortality is appalling.

Rilliet and Barthez mention thirty-three cases with four recoveries, twenty-one deaths, and eight not accounted for.

Surgical Treatment.—No absolute rule can be laid down for the management of all cases. We have our choice of operations from the following: For example, we may resort *first*, to aspiration; *second*, aspiration and washing out of the cavity with an antiseptic solution; *third*, thoracentesis with trocar and canula; *fourth*, thoracentesis with sub-aqueous drainage; *fifth*, simple incision; *sixth*, simple incision and drainage; *seventh*, simple incision with through and through drainage, with, or without, antiseptic precautions; *eighth*, subperiosteal resection of rib and drainage; *ninth*, thoracoplasty (Eslander's operation); *tenth*, perfusion.

Which of these various methods will give the best results? As a matter of fact, as practical surgeons, we may confine ourselves to the relative merits of but two of these methods—aspiration, and free incision with drainage.

There is no question but that in a certain minority of cases in children, simple aspiration once or twice repeated, will effect a permanent and satisfactory cure.

I have the records of four such cases:

Case 1.—Charlie F., æt. 18 months; diagnosis, empyema, which was confirmed by Prof. H. A. Johnson; cured by aspiration; five ounces of odorless pus; died three years subsequently of malignant diphtheria. This patient was also seen by Prof. Waxham, and Dr. D. H. Sullivan.

Case 2.—Mamie S., æt. 30 months, treated for six weeks for chronic pneumonia by a distinguished physician; cured by one aspiration; twelve ounces of greenish pus withdrawn, very flaky; diagnosis confirmed by Drs. E. E. Babcock and T. K. Jacobs.

Case 3.—Baby, æt. 14 months; two aspirations; cured.

Case 4.—Infant (Home of the Friendless); empyema; two aspirations; cured.

Aspiration has the advantage of being simple, safe, and occasionally curative; but if we find the fluid re-accumulates, or septic symptoms are developed, then a free incision with drainage is imperatively demanded.

Aspiration has the disadvantages of leaving a small amount of pus for reabsorption, or which may become an inspissated residuum according to Abbe, that will result in a secondary abscess in after-life. Surgically considered, it is not as perfect an operation, or as scientific a procedure, as evacuation by a free incision and the introduction of a large sized drainage-tube.

Of 121 cases treated by aspiration alone, 23, or 19 per cent. were cured, six died, and the rest came to some other method of treatment, usually incision.

Incision.—Free incision, therefore, remains as the method possessing the decided advantages of complete evacuation of the purulent fluid, flakes of lymph, etc., and it moreover permits us to explore the cavity with the finger or sound and break down any septa or bands of adhesion. It permits of subsequent irrigation, if the septic nature of the fluid demands a washing out, and also gives us complete drainage.

The technique of the operation is comparatively simple; the diagnosis having been established beyond a doubt by preliminary definitive hypodermic aspiration. The field of operation is prepared in the usual manner for all aseptic operations. The point of selection for free incision and drainage is the posterior border of the axillary line in the 6th or 7th interspace, as in the recumbent position expansion of the lung tends to expulsion of the fluid at this point, although cases left to nature ordinarily point in the 5th inter-space, two inches to the outer side of the nipple. General anæsthesia is usually not required, although a few whiffs of chloroform in nervous children are of advantage sometimes. But local anæsthesia by means of the ether spray or hypodermic injections of from ten to fifteen drops of a 4 per cent. solution of muriate of cocaine answer every purpose in abrogating pain. The fold of skin at the site indicated is transfixed on a line with the upper border of the rib and incised for one and a half inches; then the intercostal muscles and pleura are divided, and as pus flows out in a full stream a large-sized rubber drainage tube is inserted and secured by safety pin, or by a button of rubber flange reflected so as to prevent its intrusion into the pleural cavity. The tube should not be more than three inches long. Irrigation should not be resorted to except in septic empyema where the fluid is fetid and caseous from bacterial decomposition.

I recently lost a patient during an irrigation with a solution of warm water slightly boric. The cause of death was probably due to a thrombus or obscure pleural reflexes causing shock.

As soon as the tube is introduced it should be covered with sublimated gauze so as to prevent entrance of septic germs, and the pus should be allowed to flow out upon absorbent cotton or antiseptic gauze, and the dressings changed daily. Strict antiseptic precautions are always necessary,

and our greatly improved results and lessened mortality are due to the antiseptic treatment now employed.

Contrast the different results: Depuytren operated in fifty cases with only four recoveries, while L. Emmett Holt reports sixty-three cases operated upon under full antiseptic precautions, with only two deaths. Of this number twenty-six successive cases were operated on by Goodhart and Taylor in the Eveline Hospital, London, with only one death, and *that* from a complicating pericarditis and peritonitis. The average duration of the discharge was about six weeks. In children we are usually able to discard the use of tubes in three weeks. When close apposition of the ribs causes flattening of the tube during pressure from coughing or induces neuralgia due to pressure upon the intercostal nerve, subperiosteal resection of one and one-half inches of the single rib will afford ready relief and better drainage; although my experience has been that it is rarely required. In old empyemas in children, or when we have a chronic abscess discharging through a sinus and shortening the life of the patient by lardaceous degeneration of kidneys, liver or spleen, or from general exhaustion, Eslander's operation of thoracoplasty should always be performed, although its field of usefulness is limited; but, if necessary, a sufficient number of ribs and a section of each should be made to permit the complete retraction of the divided ends of the ribs to the bottom of the cavity, thus closing it, otherwise a fistulous tract remains requiring a subsequent operation.

In regard to Ewart's method of perflation, reported last year, I have no personal experience.

In conclusion, therefore, I may summarize my observations as follows:

1. The surgical treatment of empyema in children is eminently satisfactory, and yields better results than in adults.
2. Multiple hypodermic aspirations are necessary to perfect a diagnosis, and should always be resorted to in cases of thoracic disease about which there is any element of doubt, especially in cases of pneumonia that exceed the usual period and become "old monia."
3. Aspiration cures a small minority of cases and should always precede a more radical operation, especially in localized empyemas.
4. Free incision and drainage, with local anæsthesia, under strict antiseptic precautions, gives the most satisfactory results in the majority of cases.
5. Subperiosteal resection of the rib is sometimes necessary to afford perfect drainage.
6. Thoracoplasty is rarely required in children.
7. Other methods of treatment should be resorted to for special cases or circumstances.
8. Early incision, perfect drainage, and complete antisepsis should be the rule.

GYNECOLOGIST VS. GENERAL PRACTITIONER.

Read in the Section on Diseases of Women, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY J. W. BROWN, M.D.,
OF MORTVILLE, N. Y.

The able paper of Dr. Van de Warker upon proper methods of *instruction* leaves little to be said; but how shall we *practice* who are numbered with the rank and file of the profession, and are not so happily situated that the elegancies of specialism are obtainable? The general practitioner in the country has no sinecure. His attainments are well known, although but little from his pen appears in the journals, and he is not *invited* to elaborate pages of *theory* in the prevailing subscription treatise. His attendance at stated meetings of our various medical societies is uncertain; yet his opinions are none the less worthy of consideration, no matter how remote may be his location. With only a limited command of current literature and less time for its perusal, and with a meagre library, we find him working out these problems after methods of his own that demand recognition, even when unaccompanied by the erudition and culture of our cities.

Results are of more value to our patients, even if lacking the trade-mark of Vienna or Berlin; but how shall we obtain them? We all know to our sorrow the *magic* of the word "gynecologist" to our *patient that pays*. Imperceptibly she drifts from us. But how about the poor unfortunates who cannot afford this luxury, and whom we have with us always? To the wealthy, or those of modest means, the "private" hospital is always open, with skilled attendants, proper diet, regulated exercise, freedom from care, plenty of sleep; and, after weeks or months of special treatment, they return to us greatly benefited—sometimes (?) well, and at a cost that would wonderfully help the family physician; but *specialism is expensive*, and we therefore see the *cream* served upon the table of our brethren of gynecic renown, while we take *skim-milk* "in ours," and patiently listen to "how little country doctors know about female troubles," and are asked to wait when our modest bills are presented, as it cost *so* much for Dr. —. In the meantime what becomes of our poor patient (her husband mayhap a laborer), with a large family? She is anæmic, with all the concomitants of typical nervous exhaustion. Does she ever get well? Is her progress any the less rapid than that of her more fortunate sister?

We all know what specialism accomplishes, and it is far from my desire to disparage it. We would indeed be in "*outer darkness*" were it not for the distinguished labors of American gynecologists. But what means shall we adopt when we cannot follow in their footsteps, not having the adjuncts at our command? Who is there in active country practice that has not some of these typical cases

who can barely afford the necessities of life. We have no hospitals at our disposal, and attendants are limited to some gossiping dame whose constant chatter drives them to the verge of distraction; the food is often improperly cooked and served in a manner that may be termed brutal; the little niceties of the fastidious nervous invalid condemned as fussiness, and a spirit of fretfulness developed by constant "nagging." It is useless to extend the tale—we all know it only too well; yet are our results any the less satisfactory? Is there not a tendency among our *confrères* of gynecological renown to ignore what general medicine taught them years ago, and attend only to the *special* features as seen by them, and by *their* influence through their patients affect the majority of women by calling attention to genital disturbances and thereby magnifying them? To us that cannot afford these luxuries and have not the time at our disposal for the dilettanteism of the profession, what shall we do? With the best means within our reach, *theoretically* our work is useless. *Is it so practically?*

What will best accomplish the cure of these poor nervous invalids, with no brain lesion, yet standing upon the border of "melancholia"—starving mentally, nervously and physically? Why does insanity in country districts make such rapid progress? We who spend our lives in farming communities know too well the monotony that is the lot of our poorer patients and, when accompanied with genital disturbances, makes their lives a curse and causes us more anxiety than profit. Shall we desert them because theoretical treatment is not attainable, and financially they cannot be removed from these influences and obtain the rest of body and mind so essential to recovery? Take our specialist from his idols and where is he? We must solve this problem ourselves, and I hope the discussion may develop much that we can apply to their alleviation. In their management, the merely negative man will not succeed. Be certain of your diagnosis, "then go ahead." Obtain their confidence or else abandon the case. Respect the hyper-sensitiveness, that is always present. Do not be arbitrary, as much depends upon moral suasion. Treat all genital lesions after recognized methods, adapting to the circumstances and surroundings. We have plenty of fresh air and, with pure milk and good diet, general debility can be slowly restored. Use tonics judiciously, but the mental starvation, associated with ovarian tenderness, engorgement, neuralgia and its legion of disturbances, must ever prove the obstacle that requires our most urgent efforts to surmount.

Neurasthenia is no myth, even among the poor or in remote country places, and the difficulties of cure will ever tax our utmost resources. Regulate menstruation and the abuse of sexual gratification. Divert attention from genitals, making light of their influences. Educate the will. Teach

self-reliance. Turn their thoughts towards recovery, not hypochondriasis. Make them understand that you will assist, *not* sympathize with every imaginary ache and pain. Trust them and encourage them in their effort towards recovery; even "if they fall by the wayside," try it again. Do not encourage morbidness, for we all know the craving for sympathy that invariably persists even when partially convalescent. Avoid drugs, especially anodynes, hypnotics and opiates. Treat upon general principles, no matter if it is old-fashioned. It is no sign of mental decrepitude if our patient retains her ovaries intact or trachelorrhaphy has never been performed. Again repeating that, while admiring the skill and general worth of our brethren of special faith, they must always remember that general medicine is the *sine qua non* of success.

OBSERVATIONS ON YELLOW FEVER, WITH SPECIAL REFERENCE TO DIAGNOSIS, PROGNOSIS AND TREATMENT.

Read before the State Medical Association of Florida, 1888.

BY JOHN P. WALL, M.D.,
OF TAMPA, FLA.

The following remarks on yellow fever are based on clinical observations during the epidemic of that disease last fall in Tampa.

The etiology of this fever is but little, if any better understood than its pathology; and in these two points are to be found the individual characteristics, so to speak, of the disease. The idea of yellow fever being only a more malignant grade of malarial fever can only be entertained by very superficial observers, or those who have never passed through an epidemic of this fever. Notwithstanding this broad assertion it is not by any means easy, nor in fact always possible, to determine whether any single case is yellow fever or not; and this is especially the case at the inception of an epidemic. To arrive at a conclusion on this point quite a number of circumstances in connection with the case, apart from the symptoms, have to be taken into consideration; and then, reasoning by a process of exclusion, we may be able to approximate, at least, the probable truth. The recent history of the patient as to being exposed to infection in another place, on board ship or otherwise, and whether or not the patient has had a previous attack of this specific fever, are circumstances of the first importance to be taken into consideration. Though the patient may be from an infected place or have been otherwise exposed to the infection, yet if it can be positively established that he has had yellow fever, the probability of his having a second attack is so unlikely and remote as to warrant the exclusion of the yellow fever hypothesis in arriving at a diagnosis.

But where the patient has recently been exposed to infection and possesses no immunity acquired by a previous attack from this specific fever—in other words, is not acclimated—then, in such a case, there is a probability of its being yellow fever, and advantage should be taken of the doubt and the case managed as a case of yellow fever without waiting for a positive diagnosis. The management of such a case consists in the complete and thorough isolation of patient and attendants and, on the termination of the case, the prompt institution of measures for efficient disinfection of everything, even to premises, that might have been contaminated.

In its symptomatology yellow fever presents no well-marked indications of its true character in the beginning; nor, for that matter, at any time in mild cases, during its progress. Its attack is generally ushered in by a chill or chilly sensation, as in most other fevers and the pyrexia. With the rise of fever there is generally intense frontal headache, with pain in the small of the back and extremities, especially the legs. A feeling of tiredness in the legs, with a sense of general prostration, is usually experienced. Nausea from the beginning is not an uncommon symptom, though not always present. Incessant nausea with much retching or vomiting, during the first exacerbation of fever, indicates the case to be of a severe type. The tongue is generally coated with a white or whitish fur, is sometimes enlarged, and almost invariably presents red edges on the sides. The temperature for the first three days may range in different cases from 102° to 106° F., with a slight morning remission in the majority of cases. The pulse for the first three days may range in different cases from 90 to 110 per minute, though not so frequently above as below 100 beats per minute.

The skin is generally burning hot, rarely dry, and not unfrequently bathed in profuse perspiration. In many cases, after the fever sets in, the extremities remain cool, while the body heat is intense and pungent. And it is in this class of cases where mustard pediluvia or mustard sitz baths have been found so useful and beneficial in restoring the equilibrium of the circulation, as to render the mustard bath an almost universal remedy in the beginning of treatment. In severe cases albumin will be found in the urine on the third day, as a rule. Its presence is always a grave symptom, but as it is rarely—never in my observations—to be detected before the third day, it is impossible to determine up to that time whether the case is to be of a mild or grave type. In all cases where albumin is not present in the urine on the third day or at the expiration of seventy-two hours from the inception of the fever, the case will, as a rule, prove to be of a mild type, and the patient and friends can be assured of a speedy recovery if great prudence in eating and drinking is exercised for two or three days more.

And just here it is well to distinctly emphasize the fact that it is the acute parenchymatous nephritis, as indicated by the presence of albumin in the urine on the third day, which is the most marked characteristic of the graver type of this fever, and without which the icteric hue of the conjunctivæ and skin is rarely, if ever, developed. But it must be borne in mind that by no means do all cases of this fever, as it presents itself in this country, have albumin in the urine. And it is the presence of albumin in the urine on the third day, subsequently followed by the icteric hue of the conjunctivæ and skin, by which this fever can be positively diagnosed. These two symptoms—albumin in the urine and the icteric hue—at the proper time and in proper sequence, render the diagnosis of yellow fever as positive, from a scientific point of view, as it is possible to diagnose, any other disease by physical symptoms.

The later writers and authors speak of albumin appearing in the urine in yellow fever, but fail to indicate at what time or stage of the disease the albumin is to be found; and they also fail to say that it is not present in all cases—two facts of the first importance. In the *London Lancet* of March 17, 1888, Dr. Robert Lawson, Inspector-General of the British Army, who had served in Jamaica, says: "On the evening of the third day, or morning of the fourth, the urine generally presents traces of albumin," thus confirming my observations as to the time when the presence of albumin in the urine may be expected. He fails to state, however, that albumin is not present in all cases of the fever, a fact of the highest importance in eliminating much of the confusion in regard to the diagnosis. In mild cases, where no albumin is found in the urine on the third day, the fever will terminate on the expiration of seventy-two hours, sometimes earlier, not to return, and the patient will progress to rapid convalescence without further trouble.

Yellow fever is generally described by authors as a fever of one paroxysm of seventy-two hours' duration, followed by a stage of apyretic calm of variable length, from one to twelve hours, and this is succeeded by the recurrence of fever of more or less intensity, accompanied with nausea and vomiting of white glairy mucus at first, then flecked with dark specks and shreds, which have been compared to bees' or butterflies' wings, finally terminating in the coffee-grounds-like black vomit. Now, as a rule, all of this is true of typically bad cases, but this secondary fever and nausea are very rarely to be met with in mild cases devoid of albumin in the urine on the third day. And in all cases in which there is no nephritic complication, as indicated by the absence of albumin in the urine, yellow fever ends on the third day, or perhaps earlier, convalescence practically sets in and recovery is soon complete.

Thus it will be seen that practically there are

two types or grades of this fever to be met with in an epidemic—one whose main feature is an acute parenchymatous nephritic complication developed by the third day; and the other which, having no such complication, ends with the first paroxysm of the fever and almost invariably terminates in speedy recovery, the patient being up and about as early as the fifth or sixth day. Not so, however, where albumin is detected in the urine on the third day; for while, in this class of cases, the high fever of the first three days may subside, and the pulse rate return to the normal, or even fall much lower, and the temperature be anywhere from 97° to 104° F., the patient still continues in a most critical condition, and not unfrequently so remains for an indefinite number of days. In some instances the temperature and pulse are normal, and so remain after the subsidence of the first paroxysm of the fever; but there are plenty of indications, and especially the albumin in the urine, to show the serious condition of the patient. It is doubtless this class of cases to which relapses are attributed by a certain class of physicians who are always trying to explain away why they failed to cure all their cases of yellow fever.

The amount of albumin in the urine varies in different cases, ranging from 5 to 75 per cent. of volume of the total amount; and, as a rule, the greater the amount of albumin, the more serious and less hopeful may be considered the prognosis. In these nephritic cases the eyes begin to show the icteric hue on the fifth day, and on the sixth or seventh day the skin begins to turn yellow. In rapidly fatal cases, terminating as early as the fourth or fifth day, the yellow hue appears earlier and is always well-marked after death. The yellow color which is characteristic of this fever in its worse and most fatal type, and has given the fever its name, is very rarely indeed, if ever, present in cases unaccompanied by the nephritic complication. This is repeated because it is a most important fact to remember.

Hæmorrhages from mouth and nose are not infrequent in the severe grade of cases having the nephritic complication. The urine may be tinged with blood, imparting to the coagulated albumin a dark color, but hæmorrhage from the urinary organs is seldom profuse; and as these hæmorrhages never occur in the paroxysm of the fever of the first three days, and only in cases with the nephritic complication, there should never be any trouble in differentiating yellow fever from hæmorrhagic malarial fever. The eyes become bloodshot in no inconsiderable number of cases. Epistaxis and bleeding from the gums are the more common forms of hæmorrhage met with in this fever, and the nose-bleed is often alarming. Among females passed puberty, more or less uterine hæmorrhage is almost certain to occur during the course of the fever, making its appearance

from the third to the fifth day. Even in mild cases this uterine hæmorrhage is rarely absent—and by mild cases are understood those without the nephritic complication.

The icteric hue of conjunctivæ and skin has very much the appearance of ordinary jaundice, though it is hardly likely that it is produced by the same cause—retention of bile in the blood—for the reason that bile is not very frequently found in the urine, as is universally the case in ordinary jaundice. One of the tests for bile in the urine is to add albumin and precipitate it with heat and an acid, when the coagulated albumin will assume a greenish color, imparted by the presence of biliverdin. In cases with the nephritic complication the albumin is already present in the urine, but it is only occasionally that the precipitated albumin assumes the greenish color of the biliverdin. From the time the yellowness of the skin becomes fully developed until it begins to fade, the capillary circulation is extremely sluggish; so much so, in fact, that firm pressure on the chest with the open and separated fingers leaves their marks on the surface for a number of seconds if not a full minute. Judging from the tendency to hæmorrhage and the capillary stasis which are such prominent features in severe cases of this fever, and taking into consideration the absence of bile in the urine in the large majority of cases, the conclusion is highly probable, if not positive, that this yellowness must be mainly dependent on pigmentation of the eyes and skin by the coloring matter of the blood, instead of being occasioned by the retention of bile in the blood—as in ordinary jaundice—as is generally supposed and believed.

Suppression of urine, or a very scant secretion more or less tinged with blood, only occurs in the third stage of the fever; rarely, if ever, during the paroxysm of the first three days. And it is only in this graver type of cases, with the nephritic complication, that suppression of urine takes place, to be followed by spasmodic twitchings, stupor, convulsions and death. These muscular twitchings are especially noticeable about the face. These nervous phenomena are supposed to be the effects of uræmic poisoning as a result of non-excretion of urea by the kidneys and its retention in the blood. But be that as it may, their occurrence is almost a certain prelude to a fatal termination, and in a prognostic sense is as bad, if not worse, than the black vomit. Hiccough is never met with in the first fever, *i. e.*, before the fourth or fifth day, and is a symptom of the most unfavorable import.

The injected and watery eyes, swollen face and anxious countenance so generally depicted by writers on this fever, may be noticed in a large number of cases, probably the majority. The detection of albumin in the urine on the third day of the fever and the subsequent icteric hue of eyes

and skin, establish the diagnosis of the fever beyond all doubt. But as before pointed out these two symptoms are absent in mild cases—those unattended with the nephritic complication—and hence the frequent disputes and contentions as to diagnosis in the beginning of an epidemic. The duration of the paroxysm of the fever for only seventy-two hours, or even perhaps a shorter time, and its abrupt termination without the use of quinine, should excite, however, grave suspicion of its character; and this suspicion will be greatly strengthened if the chill come on in the night, and especially in the latter half of the night. Dengue is the only other fever of our climate which may be ushered in by a chill at night, but its symptoms are too well marked—besides being a proverbially non-fatal disease—to admit of its being mistaken for yellow fever, or, *vice versa*, yellow fever being mistaken for dengue, by any one but the merest tyro in the profession—especially after a few days study and observation.

This brevity of the first paroxysm of yellow fever in mild cases, the subsidence of the fever without the use of quinine, the severe frontal headache, with pain in the back and extremities, and the absence of a second paroxysm of fever, taken with the appearance of the eruption on the extremities associated with dengue, will rarely fail to indicate to the experienced physician the true nature of the case. Many yellow fever patients emit a peculiar odor which the experienced physician has no difficulty in recognizing, though he may not be able to describe it by comparing it to any similar smell.

The matter of early diagnosis is a most important one in our Southern cities and towns as it is generally conceded, and my own experience tends to confirm this view, that if the first case (or cases) is recognized and proper measures of isolation and disinfection are instituted an epidemic may be prevented, especially in places whose atmosphere is not vitiated with miasmatic exhalations from accumulated filth. Hence the importance of ever being on the alert and carefully investigating any and every case of fever that comes under observation during the season when the fever usually prevails—the summer and fall of the year.

Daily observations should be made for the detection of albumin in the urine from the first to the fourth day, and if its presence is denoted on the third day the diagnosis is probable, and if on the sixth or seventh day there appears the icteric hue of conjunctiva and skin the diagnosis is positive. If the case is mild, however, but with the severe frontal headache and other symptoms already detailed, and abruptly terminates on the expiration of the third day, though no albumin may have been found in the urine, the diagnosis of yellow fever is only problematic, but the benefit of the doubt should be given to the community and all necessary precautions taken to prevent the increase and spread

of the infection. Of course the previous history of the patient, as to the probability of his having been exposed to the infection, and as to his ever before having had yellow fever, should be duly investigated.

As to treatment little need be said, as, unfortunately, so far no specific treatment has been found. The mild cases of the fever—those destitute of the nephritic complication—will, as a rule, get well spontaneously, with or without treatment, and it is probably because of the failure to recognize the two types of this fever pointed out in this paper that so many different remedies have been vaunted and then laid aside, and so much been said of different epidemics differing in their phases, and of remedies effective in some epidemics and futile or useless in others. The main indications are to restore the equilibrium of the circulation by mustard pediluvia or baths, evacuate the bowels with some efficient though mild purgative, and control the febrile excitement by the use of antipyretics—antipyrin and antifebrin. So far as my experience goes mercurials do not appear to possess any special advantage, except possibly that the stomach is not so likely to reject them as it often does more bulky drugs. Doubtless the common, though possibly erroneous belief that yellow fever is only an intensified form of bilious fever, and that the icteric hue is dependent on the same cause as that producing jaundice, and hence the fault laid to the liver, has always attached more importance to the use of mercury in the shape of calomel in this disease than experience justifies. Castor oil, or the more common salines, will be found about as good evacuants of the *primæ viæ* as anything else. Quinine is a useless drug in yellow fever unless there is some evidence of a malarial complication. It may be advantageously used during convalescence, but it is perfectly valueless in controlling the disease. Administered in mild cases, which would naturally recover, quinine often has received the credit of having cut short the fever as a *post hoc propter hoc* conclusion. The refraining from its use, even in mild cases, is advantageous in a diagnostic point of view, for if the fever spontaneously terminates by the end of seventy-two hours, or earlier, the presumption is against it having been of a malarial type. Antipyrin in 10 grain doses every three hours appears to have a very beneficial effect in reducing temperature, promoting diaphoresis, and relieving headache and other pains. Its advantages over antifebrin are its analgesic properties and greater solubility which renders its administration by enema in 20 or 30 grain doses almost as efficient as when administered *per os*. And this method of administration sometimes becomes necessary on account of nausea and excessive irritability of the stomach. The use of opiates is always hazardous, unless there was some way of determining anterior to the third day that no nephritic complication

would be developed, as their tendency is to induce suppression of urine. Of course in mild cases in which there is no albumin in the urine it is not certain that their use is hurtful, but the difficulty as to their use arises from our inability to determine this very important point as to the nephritic complication; and hence the safe rule is to eschew the use of opiates entirely in the treatment. An occasional exception to this rule may be made in cases presenting other complications and where the kidneys are not, or only slightly, affected.

As to food and drink, the less taken the better, so as to keep the stomach as quiet as possible. Cold drinks are decidedly injurious in the great majority of cases. Hot drinks are borne much better, and hence, doubtless, the common practice of administering lemon leaf and other teas. Possibly the benefit derived from these hot drinks is dependent on their constricting effect on the capillaries of the mucous coat of the stomach, on the same principle that injections of hot water are used in gynecology. For nourishment a tablespoonful of equal parts of milk and lime-water may be given every two hours, though if the patient is not naturally feeble "Tannerism," or starvation, may be practiced.

In the graver type of cases with the nephritic trouble, no line of treatment after the third day, promises any certainty of success. So long as the quantity of albumin in the urine remains comparatively small and the kidneys continue to act tolerably freely there is encouraging hope of the patient "pulling through," though there is no means of telling when or how soon the action of the kidneys will become fatally impeded or suppressed, and the case terminate in stupor, convulsions and death with or without black vomit toward the end. It is in this class of cases that we are constrained to recognize the impotency of our art and our utter helplessness in the presence of this dread disease. In this latter stage the tincture of digitalis in 10 to 15 drop doses every two or three hours may prove of some advantage as a heart tonic and diuretic. Of course, alcoholic preparations are indicated to sustain the flagging vital powers; but, unfortunately, like a great many other remedies, disappointment is only too frequently the result of their use. In the mild cases without the nephritic trouble alcohol is rarely indicated, it may be occasionally indicated in the nephritic cases where the quantity of albumin is small and the kidneys act fairly well, while in the worst grade of cases, it, like everything else in the way of remedies, is likely to prove of little avail.

No remedies proved specially useful in relieving nausea and hiccoughs. Cocaine was tried without benefit. Carbolic acid in small doses proved a failure. In fact nothing but as complete abstention as possible from food and drinks appeared to do any good.

NOTE.—These observations are based upon 130 cases that I have treated myself, in which the urine was tested, besides seeing a large number in consultation where the urine was examined also. Dr. J. V. Porter, who was here during the epidemic and had charge of the Fever Hospital and the Government relief measures, admits that his observations tally in the main with mine.

THE FORMATION OF AN ARTIFICIAL URETHRA FOR PROSTATIC HYPERTROPHY.

Extempore Remarks before the Medical Society of Virginia, Wednesday Evening, October 24, 1888.

BY HUNTER MCGUIRE, M.D.,

EX-PRESIDENT OF THE MEDICAL SOCIETY OF VIRGINIA; SURGEON TO ST. LUKE'S HOSPITAL, RICHMOND, VA.

After relating a case in which members of the Society were personally interested, Dr. McGuire said that this is the way that men usually die (by surgical kidney) who have serious obstruction to the passage of urine. In both sexes, and at all ages, mechanical obstruction to the passage of urine from the kidney ends in cystitis, ureteritis, pyelitis and pyelo-nephrosis. Obstruction may be due to stricture, enlarged prostate, tumor, stone, etc. It ends sooner or later in surgical kidney.

A very common cause for this is an enlarged prostate. This comes on after the age of 55 years. As far as Dr. McGuire's experience goes, if a man escapes this trouble until he is 63, he is not apt to have it. We all know how common it is in old men—so common that he sometimes wonders that it was not included in that wonderful description of old age found in the last chapter of Ecclesiastes. Possibly senile hypertrophy did not belong to that period; but is one of the results of so-called modern civilization. We don't know. We only know that hypertrophy of this gland is, with rare exceptions, peculiar to man. The prostate is a curious body; it is made up of fibrous, glandular and muscular tissue. It would be as well, if not better, to call it the prostatic muscle, than to call it the prostatic gland. It supports the bladder, which, otherwise, is so lightly and so feebly held in its position. The erect posture which man assumes puts a great strain on this body. Indeed, this might be used as an argument that it was intended for man to go on all fours, like the quadrupeds.

When deterioration of all the tissues begins—that is, about 55 years of age or more—this structure may commence to get bigger; it may enlarge toward the bowel, and do little or no harm. But if its growth encroaches in any way on the lumen of the urethra, then trouble begins. Put your finger into the patient's rectum, and you may find the prostate greatly enlarged; and yet

the man may have no evidences of urinary obstruction. And, on the other hand, the finger may reveal to your sense of touch no increase in the size of the gland; and yet there may exist marked prostatic obstruction. There may be new growths, tumors, true myomata which can be only felt by the finger in the bladder. The enlargement may be either centric or eccentric. You cannot reckon the extent of obstruction by the mere size of the gland felt through the rectum. All this depends upon the direction of the growth. Let it encroach, even slightly, upon the urethral canal, and lessen its size, and there soon follows irritability of the bladder, retention of urine, cystitis; and if this goes on, pyelitis and pyelo-nephrosis.

Dr. McGuire saw before him, as he was making these remarks, which he certainly did not intend to make, and for which he was entirely unprepared, many gray headed men who are listening to him with great attention. Some of you "old Fellows" may already know that your prostates are getting larger than they used to be; that it takes you a little longer to make water now; that it is slow to start; that the stream is not sent as far from your body, but drops down between your legs, which you keep wide apart to prevent your trousers from being splashed. He advises you to try to empty the bladder every time you urinate, and not leave in it some residual urine which will decompose, just as it would do in a dirty chamber-pot, and afterwards set up in your bladder irritation and inflammation. Take care also to keep your body, and especially your feet, dry and warm. Don't sit on a cold stone or a wet saddle. Keep your bowels open, and let whisky alone. If the enlargement goes on increasing, and the calibre of the urethra is more and more diminished, more prominent and urgent symptoms are presented. Sudden retention of urine may occur, requiring the use of the catheter; or (and this is just as frequent) the patient will tell you that he cannot hold his water; that he has incontinence of urine. This condition generally means that his bladder is distended with urine, and overflowing; and the catheter is required here to relieve the over-distension. It would be out of place for him to talk about antiseptics and germs now. But it is not out of place for him to beg you to keep your catheter clean. A dirty catheter is a very dangerous instrument.

After a longer or shorter time, this enlarged prostate forms a dam at the outlet of the bladder, and only the water above the level of the dam escapes during micturition. Some urine, which is called "residual urine," is always left in the bladder. This decomposes, becomes ammoniacal, is an irritant and sets up cystitis. The poor sufferer strains violently to make water. This tenesmus of the bladder provoked by the obstruction, injures the vesical end of the ureters. These

tubes become involved, and the disease extends to the pelvis of the kidney, and presently to the kidney itself. Try to prevent this cystitis if possible. You may know that it is coming on by the irritability of the bladder; by the frequent calls to micturition; by his telling you that he never feels "like he is done" when he makes water; by his sense of weight, fulness and discomfort about his bladder, and by the other symptoms that have been mentioned. It is not worth while to try drugs of any kind, or dilatation by bougies to lessen the size of the prostate. Dr. McGuire has spent a good deal of time and money in endeavoring to reduce the gland by electrolysis. In his hands it has done no good. The only good you can do is by using the catheter—a clean gum catheter—letting the dirty residual urine escape, and, if need be, by washing the bladder clean with hot water. At the same time, you must attend to his general health and modes of life. Very often in this way the man will go on for months very comfortably. Sometimes the enlargement, if it be due to simple congestion and irritation, will pass away under this course, and the parts will be restored to their normal state. But if the enlargement be due to a true fibroma, or myoma, or if the hypertrophy be diffuse and fixed, then you may be sure the trouble will increase, and you will soon come to a period when palliation is no longer possible, and you must resort to operative measures.

It is wonderful how long a man may use the catheter, and the bladder retain its power of expelling the urine when you make a free opening into that organ. One of Dr. McGuire's patients has used the catheter for three years, never once in all of that time passing a drop of urine through the urethra without the aid of an instrument. As soon as an artificial urethra was made for him he could send the urine in a steady stream three feet from his body. In this case, the prostatic obstruction was so great that he often spent half the night trying to get the catheter into his bladder. When his bladder was opened, and the finger introduced, it was found that long-continued vesical tenesmus had pushed a part of the bladder down behind the prostate, making a pouch or cul-de-sac there, two inches deep; and in this pouch, what had not been suspected, a large prostatic stone. Dr. McGuire had sounded this man repeatedly for stone, and had not found it. A very short time afterwards another man was brought to his hospital—a poor old preacher who had been in bed for seventeen months with fearful cystitis from prostatic hypertrophy. He, too, was sounded as carefully as possible for stone, but none found. When his bladder was opened to make for him an artificial urethra, the first thing felt by the finger was a stone down in a pouch behind the prostate.

Dr. McGuire has operated for stone in the blad-

der, one way or another, 150 times or more, and this confession seems a strange one; but it is nevertheless true, and he believes before he operated in this way for prostatic hypertrophy that he has overlooked more than one case of stone in the bladder in such subjects. The first one of the patients referred to was one of the cases in which he had tried electricity, using an intense current after Apostoli's plan. When he put his finger through the bladder on this prostate, which was literally as big as his fist, and had, along with this general hypertrophy, numerous large and small, hard nodular growths or tumors on its vesical surface, he felt how idle had been his effort to do any good in this way; and he has put out of sight and out of reach his expensive prostatic and vesical electrodes. If after what he has said about them, any Fellow wants them to try, he will cheerfully give them to him.

After you have exhausted the use of the catheter and palliatives generally, you must open the bladder and let the urine drain away, and give to the bladder and to the man, too, a rest which both sadly need. This is the only way by which you can possibly cure the cystitis and prevent disease from reaching the kidney. It is the only way by which you can stop the pain, or lessen the size of the prostate, or restore that man to anything like his normal condition. Now, how to do this?

The first time Dr. McGuire operated for stone by the supra-pubic method, he was struck with the fact that the bladder contracted as soon as an opening was made in its anterior wall, with a force sufficient to drive out every drop of liquid it contained, and that there was no more need for drainage tubes after supra-pubic cystotomy than there was after perineal lithotomy. The bladder is not an inactive bag, as you would expect to find it in a dead or paralyzed body. Its walls contain elastic and muscular forces which, in the natural state, are resisted by the same kind of structures at its outlet. But when an artificial opening is made in the bladder at any point, the muscular and elastic tissues in the walls of the organ contract and keep the viscus empty of any fluid. Recognizing this fact, he abandoned drainage tubes after supra-pubic cystotomy, as after many years we all were led to do after perineal section for stone. It was this principle that had led him to attempt the formation of an artificial urethra for prostatic hypertrophy.

The operation is very simple. You inflate the rectum with a rubber bag, which pushes the bladder up above the pelvic brim. Inject the bladder with water to make it prominent. Cut in the median line through the skin and superficial fascia from the symphysis pubis to a point three inches above. Separate, with the handle of your knife, the recti muscles. Cut through the transversalis fascia upon a grooved director. With the handle of the knife go through the fat and

loose cellular tissue in front of the bladder. Catch this organ, now exposed to view, with a tenaculum, and open it with the point of your knife. Carry your finger into the bladder, and examine it. Open the bladder as low down as you safely can—not higher than the top of the pubes. Let the water out of the rectal bag and remove it. The bladder will then fall back into the cavity of the pelvis. Take one or two stitches in the lower part of the wound through the skin. Don't include the muscles in your sutures. When completed, the opening in the bladder should be as low down as you can get it, and the opening in the skin at the upper end of the incision.

For several hours, to permit the wound to glaze, and for the sake of cleanliness, he uses a large drainage tube through this track. Keep the urine acid, for acid urine is aseptic, and this is the nearest approach you can get to antiseptic dressing in cystotomy. The urine will drain through the wound as fast as it is formed; and if all goes well for two or three weeks, the opening will be reduced to a fistulous track which will admit a good size bougie, say a No. 10 or 12, American scale. Now the man will begin to urinate through the fistula at will. He can retain the water two, three or four hours, and in one of his cases as long as six hours, without dribbling, and pass it when he desires. The fistula does not leak, no matter what may be the position of his body, unless he contracts his bladder to make water, or the urine accumulates to a point above the level of the top of the fistula. If the operation is properly performed, the fistula should be from $2\frac{1}{2}$ to $3\frac{1}{2}$ inches long, and occupy the same relation to the bladder that the spout of a coffee pot does to the pot.

The operation is so simple, comparatively so free from danger, involves no important blood-vessels nor nerves, is made at a safe distance from the peritoneum, and requires for its execution only a knife, a pair of forceps, tenaculum, and grooved director. Indeed, if carefully done, he has found it so safe that he does not hesitate to perform it in cases of diseases of the bladder where the diagnosis is difficult or impossible, simply that he may explore the bladder. If a laparotomy for diagnostic purposes is justifiable, the much less hazardous undertaking of making a supra-pubic cystotomy for the same purpose is certainly so. You will at least do this good: Drain the bladder and put it at rest, which in cystitis is worth more in one day than any drug or set of drugs would be worth in a month. It is astonishing to see how soon the patient begins to improve after the opening is made. The urine soon becomes free from mucus, pus and blood, which it formerly contained in such abundance. The vesical tenesmus and irritability rapidly pass away.

In one of his cases, a man 69 years old, so fee-

ble that he could, unaided, barely walk across the room, and reduced almost to a skeleton, in six weeks fattened fifteen pounds and could walk two or three miles without fatigue. This man got out of bed in sixteen days after being cut, and soon afterwards went about his business, wearing over the opening, to prevent chafing, a bit of absorbent cotton.

In his cases, Dr. McGuire had had, for the first two months, no trouble to keep the artificial track open. If the obstruction at the neck of the bladder is great, you need not expect the fistula to close at an early day, even if you introduce nothing into it. But at the end of about eight weeks, the prostate will diminish in size, all congestion and inflammation will disappear, and Nature will now make an effort to send the water through the natural urethra, and close up the artificial one. In the case just referred to, at the end of the eight weeks the man got up one morning, made an attempt to pass the urine through the artificial track, which was temporarily closed by a clot of mucus, and to his surprise, found the urine passing through the natural urethra. This was the first water he voided in that way for more than three years. Another interesting fact in regard to this patient: For the first time in ten years he has had a return of some sexual desire and power. All this goes to show the improvement which has taken place about the neck of his bladder. But at the end of eight or ten weeks the track must be kept open by the daily use of bougies, or by the introduction of a silver or a hard rubber plug as long as the artificial urethra, and about the size of a No. 8 or 10 American scale bougie. This should be kept in an hour or more every day.

NEURALGIA OF THE LINGUAL BRANCH OF THE RIGHT TRI-FACIAL NERVE:

Read before the Medical Society of the District of Columbia, May 23, 1888.

BY SAMUEL C. BUSEY, M.D., LL.D.,
OF WASHINGTON, D.C.

Mrs. A., æt. 63, has suffered for seven years with a painful affection, which she describes as follows: Six years ago, while residing in the State of Florida, after much reading aloud for several weeks, she was seized with an acute paroxysmal pain, beginning at the root of the tongue and extending along its right border to the tip. At first it came in quickly recurring flashes of momentary duration followed by longer or shorter intervals of complete freedom; but as the time passed the painful periods became more frequent, and the paroxysmal pains increased in duration and intensity until, finally, these periods would last for several hours, during which the pain would come and go. The first attack began in the autumn and continued until spring set in.

No method of treatment, either by local applications or internal medication, afforded any relief. Hypodermatic injections of $\frac{1}{2}$ grain of morphine failed even to mitigate the suffering.

During the six succeeding years, in the early autumn, with the beginning of the first cold snap, her suffering had commenced only to terminate with the coming of mild weather of returning spring. After the attack was over last spring she abandoned Florida as a place of residence, passed the summer in the North, and came to this city early in the autumn of 1887. As usual, during the past summer she was entirely free from pain and enjoyed her accustomed good health. In the month of November last, during an inclement day, whilst in a green-house, she felt the first twinge of pain along the right border of her tongue, which came and disappeared in less time than it took to tell of it. It, however, followed the course of the previous seizures, continuously increasing in frequency and intensity.

On December 10, I saw her for the first time. I found a lady of marked intelligence, with a bright and cheerful disposition, remarkably well-preserved, and with a history of unusual good health throughout her life. Her appetite was good, bowels regular, and habits of life regular and suitable for one of her age. There was no circumstance of life or physical infirmity with which her suffering could be associated in the relation of cause and effect beyond the facts stated by the patient and elicited by examination. During this interview, whilst narrating the history of her case, she was seized with the usual pains, sometimes at intervals of one and then of several minutes, which varied in duration from a few seconds to a minute or more, and in acuteness from a mere passing flash to momentary agony, which would be exhibited in distortion of the face expressive of great suffering, followed, as it suddenly ceased, with the returning smile of relief and the utterance of the words "gone again." These paroxysms of pain far most frequently began at the base of the tongue and darted along the right border to the tip; but sometimes one would begin at the distal end of the right anterior dental branch of the fifth pair; another in the inferior dental, behind the angle of the lower maxilla; then one would seem to start from numerous points on the right side of the face; but wherever the locality of beginning the pain always reached its maximum intensity and remained longest along the course of the right lingual. During pain conversation was always suspended, because of inability to articulate. Sometimes the interruption of speech would begin with the utterance of the first or second syllable of a word. The cessation of the darts, pangs and longer paroxysms of pain was as sudden as the onset, beginning without warning and ceasing at maximum intensity. There was no oscil-

lation with gradual increase in degree and gradual decline to ease. During the periods of painful seizures, which included several or many momentary or longer paroxysms of pain, the right buccal cavity became very dry, and the tongue was thickend and dry along the right border. During sleep the periods recurred less frequently and did not continue so long. There were fewer pangs or paroxysms of pain, but they were equally intense and sudden in onset and cessation.

The seizures were induced by conversation, drafts of air upon the right side of the face, by surprise, the unexpected entrance of a person into her room, a quickly spoken word by one not engaged in conversation with her, a startling noise, falling temperature or inclement weather, by attempts at chewing on the right side, by efforts to swallow liquids—unless the fluid was confined to the left buccal cavity—by every attempt to masticate and swallow bread or potatoes, and by every movement of the tongue which approximated it to the roof of the mouth. Meats could be chewed on the left side of the mouth and swallowed with facility and ease. I attempted, without success, to produce pain by pressure, rubbing and pricking the right border of the tongue and buccal surface, by jarring the upper and lower teeth on the same side, and by pressing, pricking, rubbing and pinching the external surface. Every attempt to produce artificially any condition similar or apparently identical with the current circumstances, before recited as exciting agencies, failed to induce a fleeting pang or paroxysm. For instance, the attempt to chew food on the right side would quickly induce pain, but the striking of the crowns of the teeth with a piece of metal or the pressure of the finger upon them failed. The movements of the tongue in articulation would, but the enforced movements of the organ would not excite pain.

The patient felt convinced that she was the victim of an incurable disease. All medication had failed; in fact, in very many instances she felt that her suffering had been increased by efforts to cure. She had tried a change of climate, place of residence and broken up a long established routine of life without securing relief. The pain began with the autumnal fall of temperature and departed with its rise in the following spring. Season seems to have been the constant and unfailing etiological influence. All the other circumstances and conditions were ineffective except during the season of inclement weather and low temperatures. The fluctuations of temperature, and sudden falls occurring during the seasons of rising and high temperatures, even when associated with inclement weather did not produce a period of suffering or even a paroxysm of pain. I advised the lady to have prepared a protector to cover the entire right side of her face, and suggested the trial of electricity.

My second interview took place December 14. She had kept the side of her face protected with a soft warm pad, lined with silk, but the periods of suffering had increased in frequency and duration, and the pains had increased in intensity. I then advised the application of a 4 per cent. solution of cocaine along the course of the right lingual nerve. The next day she expressed the opinion that the applications of cocaine had diminished her suffering, in that the periods of painful seizures had been shortened. I advised its continuance and ordered a mixture containing the salicylate of soda with the oil of gaultheria. This treatment was continued for one week without satisfactory results. I then advised the continuous use of morphia sulphate in $\frac{1}{8}$ grain doses, to be repeated at such longer or shorter intervals as might prove necessary to control the pain. The lady very reluctantly consented because she had lost faith in drugs, and was averse to the use of morphia. She did not follow the method of treatment very assiduously, but sufficiently so to obtain very marked relief. The months of January and February were passed in comparative comfort. With the returning mild weather of spring, the pain, as during the six previous seasons, entirely ceased. The best that can be said is that she suffered very much less than during the same season of either of the previous six years, but a cure cannot be claimed.

Perhaps, a more decided result would have been obtained if the plan of treatment had been more diligently employed.

The history of the case points very clearly to season as the predisposing and determining cause. In this particular there is nothing peculiar. But the curious array of accidental and incidental conditions which would produce longer or shorter periods of paroxysmal pain is certainly surprising, if not unique. Then, too, the paroxysms would recur during sleep, when the incidents detailed could not occur, either singly or concurrently. This fact also points to season as the predominant etiological factor.

Peripheral irritation produced by the movements of the tongue in speech, mastication and deglutition, and certain articles of food was a frequent and direct exciting agency in bringing on pain. Emotional conditions, such as surprise and the unexpected presence of a person, were equally effective. During sleep these influences were in abeyance and the paroxysms recurred much less frequently, but with equal severity. Sudden falls of temperature and inclement weather, during the autumn and winter seasons, even though the patient remained in-doors during such atmospheric changes, would also induce attacks.

The initial attack began under like conditions and circumstances for seven successive years, and followed the same course, the paroxysms gradu-

ally and continuously increasing in frequency, duration and intensity during the autumn and winter seasons, and ceasing abruptly with the beginning of spring-weather. The pain was always limited to branches of the right tri-facial, but the point of beginning varied. Far most frequently it began at the base of the tongue and was limited to the right lingual branch. When beginning at other points it was expended along the course of that nerve.

CANCER OF THE INTESTINE.

*Read before the Medical Society of the District of Columbia,
May 23, 1888.*

BY G. WYTHE COOK, M.D.,
OF WASHINGTON, D. C.

C. H., a mulatto woman, married, æt. about 38 years, was first seen by me on November 11, 1887. She gave the following history: She has always suffered more or less at her menstrual periods. About six years ago she had a miscarriage, since which time she has not been pregnant. Has suffered for a number of years from hæmorrhoids. Of late has had much pain in defecation. During last March she noticed an enlargement of her abdomen, and in May following her physician made a vaginal examination and introduced a sound into the uterus. Since that time she has not menstruated. She has been under the care of several physicians, but has continued to grow worse. She has been taking morphia and belladonna in suppositories to relieve her pain. She is now much emaciated and has had a diarrhoea for several days, her temperature is 102°. There is a fluctuating tumor just above the pubis and extending entirely across the abdomen. It is very painful to touch. Vaginal examination shows the uterus enlarged and fixed, but the examination is unsatisfactory, owing to the pain produced in the manipulation. No positive diagnosis was made, but medication was directed to the control of the diarrhoea; this was partially successful after a few days' treatment. A large hæmorrhoidal tumor, about an inch in diameter, was now protruding and caused much suffering. To relieve this the tumor was injected with carbolic acid and glycerine with most satisfactory results. The hæmorrhoid disappeared entirely and the patient expressed herself as much more comfortable than she had been for a long time.

After this the diarrhoea was pretty well controlled, and less morphia was necessary to soothe her pain, but there was no change in the abdominal tumor. A few days later I was told that a profuse diarrhoea had set in, and the discharges were described as being of a slimy, pasty character. I found the tumor much reduced in size, and I at once concluded that it was a subperitoneal abscess, and that it had discharged through the

bowel. From this time there was continued diarrhoea for four or five weeks, with temperature ranging from 100° to 103° , with a general typhoid condition. After this there was relief of the diarrhoea for a time, but the temperature continued elevated and abdominal tenderness persisted, notwithstanding the free use of counter-irritation and opium. The tumor seemed to fill up again and presented very much the same general characters that it did at my first visit. I was never able to make a thorough examination, owing to the great suffering produced by any manipulation of the tumor. There is nothing special to say regarding the progress of the case, other than that the patient steadily grew worse, with great pain in the lower part of the abdomen and pelvis and much intestinal disturbance. Her appetite was remarkably good, and she ate an egg and some bread and butter the day she died. This occurred on the 21st of April, 1888, from exhaustion. Several times during my attendance upon the case I suggested the advisability of a consultation, and expressed the opinion that some operation might be necessary for her relief, but the patient was unwilling for anything of the kind, so no consultation was held.

With the light of the autopsy before us, it is well that no operation was undertaken, for, aside from the malignant character of the tumor, it was so firmly bound down by adhesive inflammation that it would have been impossible to have removed it successfully. The specimen presents some interesting points:

C. Z. H.—mulatto, æt. 38, married. Died April 21, 1888. Necropsy by Dr. D. S. Lamb. Much emaciation. Pleuritic adhesions at apex of each lung. Both lungs showed abundance of cheesy masses, varying in size from that of a pin-head to nearly an inch in diameter, most numerous and largest in upper lobes, where also were many cavities, some of which communicated with each other. Heart small, normal. Liver, spleen and stomach normal. Lower end of ileum showed many small ulcers, near mesenteric attachment; a few similar ulcers in ascending colon. Mucous membrane normal up to within 4 inches of anus, where was a perforation $\frac{1}{2}$ inch in diameter, with congested margins. Nearly 1 inch higher up was another perforation, oval, transverse to axis of intestine, about two inches long and one wide, with congested margins. Both openings led into a sac the size of a new-born child's head, and containing soft dark fæces. The wall of the sac was thin and generally covered with peritoneum; adherent to uterus, upper part of vagina, rectum, wall of pelvis, cæcum and several folds of small intestine. It was easily removed from the wall of pelvis. Inner surface of sac corrugated, looking like bands of involuntary muscle. For some distance around the perforations the sac wall showed a somewhat flattened growth,

about $\frac{1}{2}$ inch thick at the thickest part and ulcerated. Uterus normal; vagina normal; right round ligament normal. Fallopian tube and fimbriated end not distinct. Left tube visible for a short distance, then lost in the mass of adhesions; ovaries not visible. Kidneys normal. Bladder somewhat distended.

Dr. W. M. Gray, of the Army Medical Museum, says the cheesy masses of the lungs are tubercular, and the new growth near the rectum is cancerous.

ANEURISM OF THE ARCH OF THE AORTA AND SUBCLAVIAN ARTERY.

Read before the Medical Society of the District of Columbia, June 6, 1888.

BY JOHN B. HAMILTON, M.D.,

SUPERVISING SURGEON-GENERAL, U. S. MARINE HOSPITAL SERVICE; SURGEON TO THE PROVIDENCE HOSPITAL, WASHINGTON, D. C.

The following case of *aneurism arch of aorta and subclavian*, reported for me by Dr. Carmichael, M. H. S., occurred under my observation at the Providence Hospital, Marine Ward:

Gordon Fitzhugh (negro), æt. 48 years; nativity, Virginia; admitted to Providence Hospital, Washington, D. C., April 6, 1888; died June 1, 1888.

History.—He was first admitted to hospital on February 14, 1888, suffering from severe dyspnoea, coryza and acute laryngitis. Examination revealed the presence of a subclavian aneurism and regurgitant mitral disease of the heart. A murmur was also heard at the aortic cartilage, but it was partly obscured by the blowing sound of the aneurism. Under appropriate treatment the coryza and laryngitis subsided; while rest in the recumbent position and the administration of potassium iodide, in doses of 1.20 gm., relieved the distressing dyspnoea. He improved until March 2, 1888, when, at his own request, he was allowed to go to his home. On April 6, 1888, he was readmitted to hospital in great distress, and under treatment he again somewhat improved; but the paroxysms of dyspnoea recurred at shorter intervals; were more distressing, and his strength was much reduced. The pulsation of the tumor in the neck and the accompanying thrill and bruit were strongly marked. Auscultation revealed a loud murmur over the mitral area, transmitted towards the base of the scapula. He grew much worse during the latter part of May; delirium set in on the evening of the 31st, and at 11 P.M. he died.

Necropsy.—(Nine hours after death.) Body fairly nourished. Rigor mortis present. Brain not examined. Lungs emphysematous at the borders and congested throughout. Heart very large, and walls of ventricles show beginning fatty change (compensating hypertrophy succeeded by dilatation and fatty degeneration). The ascending and transverse portions of the arch of the

aorta were dilated into a large aneurismal tumor, and the right subclavian was also the seat of a large aneurism which, having ruptured, could not be removed from the body in its entirety, owing to the numerous and intimate attachments to the surrounding parts. The thymus gland was extremely large, and accompanies the specimen. The gland had evidently continued to grow during adult life. The heart was very large, and the walls of the ventricles the seat of fatty change; the tricuspid and pulmonary valves were healthy; the mitral was the seat of atheromatous patches and nodules, and the valve was incompetent. The semilunar valves of the aorta were thick, leathery, the aortic orifice somewhat narrowed, and numerous deposits of calcareous material were found on the valves near their margins. The liver was fatty in patches. The kidneys were congested and the other viscera were healthy.

MEDICAL PROGRESS.

WOUND OF INTERNAL MAMMARY ARTERY: HÆMATOMEDIASTINUM.—A remarkable case under the care of PROF. MADELUNG has been reported in the *Berliner Klinische Wochenschrift*, and in the *Centralblatt für Chirurgie*, No. 19, 1888. On September 2, a man, aged 39, was stabbed with a knife in the head, thorax, and abdomen, but little hæmorrhage was noticed. He walked one hundred paces, reaching his dwelling, where it was found that intestine had prolapsed through the abdominal wound. Twenty hours after the injury he was taken in a wagon to the Rostock Infirmary, after a journey of over an hour. The intestine was reduced, having been left alone till admission, and the abdominal wound sewn up. The thoracic wound was on the right side, parallel to the third rib, beginning close to the border of the sternum. It was four-fifths of an inch long, and no blood escaped from it at the time; it was drained and sutured. There were no signs of cardiac or pulmonary mischief. On the evening of September 13, after doing well for many days, pain and dyspnœa troubled the patient, and hæmorrhage occurred from the thoracic wound, which recurred on the evenings of the 14th and 15th, so that the patient became anæmic. On September 16, Dr. Madelung opened the wound. The right third costal cartilage was cut through close to the sternum. Arterial hæmorrhage was observed above and below the cartilage, about an inch of which was resected. A cavity in the anterior mediastinum, "the size of a goose's egg," was exposed; it was full of clot. An inch of the fourth costal cartilage was resected; in so doing the operator opened the pericardium. Apparently that serous sac had been opened by the stab, and

had speedily closed, the operation breaking down the adhesions which closed it. Much hæmorrhage accompanied the opening of the hæmatomediastinum, the blood gushing from the lowest part of the wound. Dr. Madelung therefore tied the internal mammary artery in the fifth intercostal space, in its continuity, when the hæmorrhage ceased. The cavity was packed with iodoform gauze, and a tampon of the same material was placed over the wound in the pericardium. The patient recovered. Dr. Madelung believed that the abdominal wound did well because no clumsy attempt to reduce the gut had been made by the patient's friends. He insists that, when the internal mammary artery is divided, both ends should be secured, on account of the innumerable anastomoses, especially with the deep epigastric.—*Brit. Med. Jour.*, Sept. 15, 1888.

SENSITIVE DENTINE.—One of the difficulties to be overcome in tooth filling is the occasional extreme sensitiveness of the dentine; and it requires considerable courage on the part of the patient to submit to the necessary cutting. Healthy dentine is endowed with but little sensibility, for if a tooth be accidentally chipped so as to expose a portion of the dentine without opening the pulp chamber, it can at first be touched without giving rise to pain, but after twenty-four hours' exposure to the fluids of the mouth it becomes irritable. Hyperæsthesia of the dentinal fibrils may follow any form of exposure—that due to caries, erosion, or fracture; and when present it varies considerably in intensity, not only in different teeth, but in different parts of the same tooth. Immediately under the enamel, in proximity to the pulp, especially the fibres radiating from the cornua of and just beneath the appreciably softened carious bone, are the situations of greatest sensibility. The two former are explained by anatomical facts. The dentinal fibres end at the periphery by forming a dense network, and open into the so-called inter-globular spaces, which, however, are filled with protoplasm similar to that contained in the lacunæ of bone, the whole forming the granular layer of Tomes, and near the pulp the fibrils are both more numerous and of larger calibre. The deepest portion of the diseased bone is probably most sensitive, because here the calcareous material has been removed, exposing the fibrils, while it has not gone far enough to destroy them. It will readily be understood from this that superficial cavities are often very sensitive; then, as the disease progresses and this portion of the dentine is destroyed, there comes a time when there is but little pain from contact with acrid fluid or solid substances, but acute sensitiveness is again met with as the pulp is approached. Other things being equal, soft teeth, from their relative greater quantity of organic matter, will be more sensitive than hard

teeth, although there are many exceptions to this rule; also the teeth of the young more than those of the aged. The various methods of treatment may be summed up under the following heads: (a) operative measures, (b) desiccation, (c) cauterization, (d) local anæsthesia; and this is probably the order of their efficiency, although combinations are often valuable. (a) Sharp instruments, rapid motion of the engine, and taking advantage of anatomical knowledge by cutting away from the pulp and its cornua and across the line of the fibrils, will suffice in most cases. After the insertion of a temporary plastic filling for a few months, it will generally be found that most of the sensitiveness has disappeared; and this is the best of all treatment if the patient is under constant supervision. (b) In order to get thorough dryness, the rubber dam must be adjusted and the cavity swabbed out repeatedly with cotton wool dipped in CHCl_3 or absolute alcohol, or, better still, a current of hot air passed through the cavity. Chloride of zinc acts partly as a desiccator and partly as an escharotic, but its application is usually very painful, and its use contraindicated when the pulp is near. (c) Carbolic acid, chloride of zinc, nitrate of silver, and caustic soda all have their advocates—carbolic acid, perhaps, being the most general favorite. Arsenious acid left in for a few hours is most efficacious; but, owing to the numerous cases of death of the pulp resulting, is now rarely resorted to. (d) Cocaine alone, or in conjunction with sulphuric ether, although of great use as a local anæsthetic in treating pulps, has not proved of much service for sensitive dentine, as it is not readily absorbed. Other drugs, such as menthol and aconite, are equally disappointing. Dr. Ottolengui's method seems, as far as experience has gone, to give good results. He first dries the cavity with hot air, and sometimes uses carbolic acid as an escharotic, and then anæsthetises the dentine with ether spray. It is maintained that the pain produced is far less than the operation of cutting by any other method. It may be interesting to note the statement that, where teeth are forcibly wedged apart for the purpose of gaining room for filling, the pain of excavating is much diminished, presumably from constriction of the nerve as it enters the apical foramen. Cocaine injection into the gum, as used for extractions, has also been recommended, but has not given encouraging results.—*The Lancet*, Oct. 27, 1888.

SALICYLIC ACID IN MALIGNANT SCARLATINA.—DR. A. SHAKHOVSKY emphatically recommends (*Novosti Terapii*, No. 6, 1888, p. 208) the salicylic treatment of scarlet fever, the recommendation being supported by 125 malignant cases of the disease, with only three deaths. He always employs the following formula: R Acid; salicylic; gr. xv.; aq. distill. fervid., 5ij; syrup. au-

rantior, 5j.; M.S. From a teaspoonful to a tablespoonful every hour during the day time, and every two hours by nights. The solution of the acid is said to be perfect, as well as palatable. In about two or three days the patient's temperature falls from 41°C. down to 38.5° or 38°C. , reaching 36.5°C. about the tenth day of the treatment. To prevent any relapse (of fever and all) the mixture must be administered every two hours for two or three days after the defervescence. Dr. Shakhovsky assures that salicylic acid, when administered after his plan, successfully prevents all complications (such as uræmia, dropsy, diphtheroid anginas, lymphadenitis, etc.), and even rapidly removes them when they are present. The salicylic treatment fails, according to his experience, (1) when it is resorted to too late (later than a fourth day of the disease of a malignant form), and (2) when there are simultaneously present certain severe chronic diseases or serious congenital defects.—*Provincial Medical Journal*, October 1, 1888.

BENZOATED CHLOROFORM.—DR. B. W. RICHARDSON recommends the use of benzoated chloroform as an antiseptic of considerable service in the treatment of fetid wounds. It is made by dissolving three drachms of pure benzoic acid in twelve ounces of chloroform, and filtering if necessary. In a case of fetid ulcer of the lower extremities, after the bandage has been applied, he prescribes a fluid drachm of the solution poured over or near the ulcer, the deodorizing effect being of the best character. He states that the solution is also the most effective that he knows of for removing the fœtor in troublesome cases of fetid exhalations from the feet. Used like eau de Cologne, he finds it advantageous to rub over the hands at a post-mortem examination, and for similar purposes where a disinfectant is required.—*Asclepiad*, Vol. v, No. 19.

PILOCARPINE IN DEAFNESS.—M. BØEKE stated at the recent Otological Congress at Brussels that he had used pilocarpine in 14 non-selected cases of deafness. The causes of deafness were cerebro-spinal meningitis in 5 cases, a fall on the head in 4 cases, various pathological lesions of the middle ear in 2 cases, drugs (sulphate of quinine, salicylic acid) in 2 cases, and an affection of the tympanum in 1 case. Of the 14 cases 7 were of several years' duration, and 7 of from 3 weeks to 6 months. The quantity of pilocarpine given in each case was from 65 to 560 millig. The duration of the treatment was from 2 to 6 weeks. Some amelioration was obtained in 3 cases, in one of which the deafness was due to cerebro-spinal meningitis. Bøeke concludes that the results of the pilocarpine treatment are discouraging. ROHRER has used pilocarpine with good results in deafness due to labyrinthine lesions, the hearing increasing from 2 cm. to 2 or 3 metres. He gives 5 millig. internally, three times a day.

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SATURDAY, NOVEMBER 17, 1888.

THE MEDICAL EXAMINING BOARD OF
VIRGINIA.

Most of our readers—all who are interested in higher medical education—will be glad to learn that the Medical Society of Virginia, at its recent annual meeting at Norfolk, showed its appreciation of the valuable work done by the Board of Medical Examiners by re-electing the whole Board, with the exception of Dr. Lankford, who resigned (though not in consequence of any objection to him as an efficient member of the Board). At this meeting of the Medical Society of Virginia 180 members were present—the largest attendance in the history of the Society—and the action in regard to the Board of Medical Examiner was unanimous; the Society endorsed without a dissenting voice the policy of the Board of Examiners. It is evident, therefore, that the profession in Virginia appreciates the work done by the Board in the cause of medical education, and the Board now begins a term of four years' work, which we hope will be even richer in good fruit in the future than it has been in the past. The opposition that was expected, and which there was every reason to believe would be shown at the Norfolk meeting, did not appear except in the way of some rather uncomplimentary references to *THE JOURNAL* by a former opponent of the Board. *THE JOURNAL* has no intention of currying favor with any one opposed to higher medical education, especially when the opposition proceeds from personal motives. We are gratified to have received letters from members

of the profession in Virginia saying that the stand taken by *THE JOURNAL* in the case of the Examining Board is appreciated.

To the owners, stockholders, and professors of the colleges that have been and are doing discreditable work we would say: You have been weighed in the balance, and are found wanting. There are but two courses open to you; go on as you have done in the past and are doing now, and some day you will find the seal of disapproval, professional and public, upon your permanently closed doors and empty lecture rooms. The other course is to do better work, and when you do this, you will be as much in favor of medical examining boards as the medical men who are loyal to their profession and thoughtful of the public welfare. There are far too many medical colleges in this country. Every new medical examining board created is a nail in the coffin of some unnecessary, low-class medical college. The colleges that hope to survive must begin the work of reformation now. The time will come when even *State* medical institutions must either place themselves on the side of higher medical education or drop out of existence. Professors in low-class medical colleges may fight boards of examiners, and ask to have *their* students exempted by legislative enactment from the test that will determine whether they are qualified to practice medicine. But they are both in the minority and in the wrong. The mass of the profession is against them, the teachers in the high-class colleges are against them, reason is against them, and the tide of intelligent public opinion is setting against them. Against the right and the majority they cannot hope to win. They must reform or close their doors.

These words are not directed more particularly to one low-class college than another. With the one case in which the teachers of a college declared war against a State Examining Board, and wished *their* students exempted from the State examinations, we have finished, for the present at any rate, since they seem to have seen the error of their ways to a certain extent. But the report of the Virginia Examining Board showed, in a way, that one-half of the colleges in this country are doing bad work—13 out of the 26 colleges whose graduates were examined by the Board. In the editorial in *THE JOURNAL* of September 6 we

gave a list of these 13 colleges, and some facts in regard to them that go to show that they are not doing good work, and why they should not be classed among high-class colleges. We shall await with interest the next annual report of the Virginia Board of Medical Examiners. Before it can appear, however, the colleges have a whole session in which to begin the work of reform. But if they persist in their former course they can expect only the inevitable.

THE HARVEIAN ORATION.

On October 18 Dr. P. W. LATHAM delivered the Harveian Oration before the Royal College of Physicians, "to commemorate the benefactors of the College, and to encourage its members to search out the secrets of nature by way of experiment," in accordance with the express wish of Harvey. Dr. Latham points out directions in which further advances are possible, and suggests routes by which these advances may be made; he pictures some of the discoveries that have been made in modern times in matters connected with the circulation, particularly in reference to some of the changes in the blood that may be associated with or productive of disease, thus indicating some of the additions to Harvey's great contribution to scientific medicine.

Dr. Latham calls attention to the colorless corpuscles of the blood, and asks if there is an antagonism or attraction between these white corpuscles and the bacilli. How are the powers, action, and growth of the colorless corpuscles modified by the presence of micro-organisms? What part do the latter play in the production of disease? Is it true that a large part of all health and disease in the world is dependent upon them? These questions, and our inability to answer them, show the degree of importance that must be assigned to the discovery of these bodies, and account for the large amount of interest now manifested in them. Dr. Latham points out some of the facts that are now known regarding these bodies. There is but little doubt that in some disorders these organisms are the causal connexion, the virus of the disease—as in anthrax or splenic fever. In relapsing fever we have a disorder associated with a bacillus, the organism disappearing and reappearing, at the blood of the infected animal being intermittent in its

power of communicating the disease to other animals. We all know how great interest has centred in the bacillus of tuberculosis, and how carefully this micro-organism has been studied for almost nine years. Following upon Koch's discovery of the tubercle bacillus came Metschnikoff's discovery of the antagonism between the cells and bacteria.

Bacilli may not be destroyed by the colorless corpuscles, however, but may live in the blood and tissues of the animal; what changes do they produce in this case? It seems now that certain chemical poisons are produced, capable of destroying life; as the result of albuminous or proteid decomposition or putrefaction certain animal alkaloids are produced, similar in nature and chemical composition to the vegetable alkaloids. Some of these ptomaines, as they are called, are harmless, while others are more or less poisonous. Had Kerner known this nearly seventy years ago he would not have been at a loss to account for the similarity of the effects of sausage poison to those produced by atropine. We need not go into an enumeration of the different ptomaines that have been discovered and described, since those interested in the subject can obtain what information they desire from the recent work on the subject by Dr. Victor C. Vaughan and Dr. Frederick Novy. Suffice it to say that, knowing the operations of the micro-organisms of fermentation and putrefaction outside the body, analogy would seem to show that the micro-organisms inside the body have similar functions, producing effects that we call disease, caused by the action of the body-microbes. Dr. Latham works out this question carefully, and shows on chemical grounds the possibility that such poisonous products may be produced by disintegration of albumen. He shows also that fatigue may produce these products, even without the intervention of micro-organisms, and suggests that under conditions of lowered vitality our bodies are more readily susceptible to bacterial infection—which is in accord with our knowledge of the etiology of disease.

Dr. Latham's interesting and suggestive lecture shows, to a degree, how vast are the uncultivated fields of medicine. "In the midst of all our weaknesses and all our many errors, we are certainly gaining knowledge, and that knowledge tells us, in no doubtful terms, that the fate of man is in his own hands."

HOW TO DRESS AND WALK.

Last Saturday the women of the Physical Culture Club, of Chicago, listened to a "Delsartian" lecture on "How to Dress and Walk," by a woman who is said to be one of the most accomplished Delsartians in the country. Physical culture clubs among women may be undoubtedly productive of much good; and that women should learn how to dress and walk is important; that they do not know how will be universally admitted. The lecturer last Saturday pointed out that women should abandon the corset, but the reasons seem to be more "Delsartian" than physiological. As far as she went in her advice in this matter she did not go wrong. The lecturer's description of the way to walk was, however, both unphysiological and absurd—though Delsartian. The following was the method given, with illustrations by the lecturer:

"If you put your whole weight on the heel instead of the ball of the foot the tendency is to make the back sink, the abdomen protrude, and the chest to draw in. The first thing for persons who wish to walk well and without effort, and who desire good forms and grace of movement, is to learn to step firmly on the ball of the foot. Next they should throw out and lift their chests as high as possible. Nations and individuals who retrograde are marked by retreating chests and shrinking carriage. There is something about developing a full, high condition of the chest that calls into action all the higher feelings of independence and self-respect."

We ask in all seriousness and with alarm: Is society to be infected with this new "fad," in comparison with which the "Grecian bend," now happily relegated to oblivion, was a blessing? Why has nature provided women with heels if these are not to be used in walking? Fashion and the shoemakers have already done enough in the way of deforming the foot, without the intervention of this new absurdity that tells women to step on the balls of the feet, and thus make walking dolls of themselves. Curious, that mankind, the highest of the animal creation, should be the only living creature that stultifies, deforms and mutilates itself for fashion's sake! Imagine a procession of women on a crowded street, each one stepping firmly on the ball of her foot, and then throwing out and lifting the chest! The heel was made to step on, to bear the whole weight of

the body at the beginning of the step; as the body goes forward the weight is transferred to the ball of the foot, from which the spring for the next step is made. Had the Delsartian lecturer advised her audience to walk on their heels only she could not have committed herself to a greater piece of absurdity than that quoted. Putting the weight on the heel does not make the chest "draw in;" and if it makes the back sink and the abdomen protrude no one is the worse for it. Physiologists will certainly be astonished to know that stepping on the ball of the foot will develop the chest and awaken feelings of independence and self-respect. We were not hitherto aware that our moral intellectuality was located in the foot, and that if we trod on our heels we became slavish and lose self-respect. It would seem that a lecturer on physical culture should at least know something of primary school anatomy and physiology.

THE ILLINOIS TRAINING SCHOOL FOR NURSES.

The eighth annual report of the Illinois Training School for Nurses shows that this institution is in an unusually prosperous condition. The school is now located in its new building, which has ample accommodations for 100 nurses. The mortgage upon the old building still remains unpaid, but the board hopes soon to come into possession of the legacy left by Miss Phoebe L. Smith, when it will then be canceled. The founders of the school are making every effort to secure a fund that will enable them to send its nurses to those who cannot afford to pay for them.

In July last the school took charge of all the nursing in the Presbyterian Hospital, there being five floors and fifteen nurses. In Cook County Hospital the school has ten wards, and during the past year has supplied the county institutions with 107 nurses. One hundred and seventy-seven persons have made formal application to enter the school in the last twelve months. Of this number fifty-nine have been received as probationers and thirty-eight accepted after the trial month, the remaining twenty-one having failed for inefficiency. Six nurses were dismissed, one left on account of ill health, and two were married. The average number in the school has been sixty eight. The June graduating class numbered eighteen. The number of nurses now

in the school is sixty-six, with nine probationers and fifty registered graduates.

In September last the curriculum of study was revised, and the following text-books adopted: "The New Haven Hand-Book on Nursing," supplemented by Clara Weeks' "Text Book on Nursing," Hutchinson's "Anatomy and Physiology," Potter's "Compendium of Materia Medica," and as a reference library the standard works on anatomy, physiology and obstetrics. The students have opportunities for a broad and practical teaching at the bedside of the sick, as the school cares for an average of 500 patients daily. Lectures and classes begin the middle of September, and close the last week in June.

The almost unparalleled growth and success of the institution is due, in great measure, to the efficiency and faithfulness of the superintendent, Miss Hampton.

CANCER OF THE PYLORUS IN A LIVING SKELETON.

The St. Louis *Globe-Democrat* of a recent date contains an account of a case of resection of the cancerous pylorus in a "living skeleton." The patient, Joseph N. Robinson, of New York, has exhibited himself as a "living skeleton" for twenty-eight years, and is now 53 years of age. About six weeks ago he went into the New York Hospital under the care of Dr. William T. Bull, on account of having become so weak that he had to be carried about, and then only with great pain. On account of his extreme emaciation, probably, he would sometimes lie unconscious from morning till night, and during the night would be hysterical and sleepless. His manager had noticed for some time that there was a tumor in the pyloric region, which could be easily felt on account of the extreme emaciation.

At the time of the operation, about three weeks ago, the patient was 6 feet 2 inches tall, had a waist measure of 14 inches, and weighed 72 pounds. The tumor proved to be a stricture of the pylorus, showing some evidence of cancerous growth (?), and "would scarcely admit a lead pencil." Complete resection of the pylorus was performed, an opening made in the anterior wall of the stomach, and the resected end of the duodenum adapted to this opening. Although the operation was long, but little blood was lost,

and the patient's condition was much better than had been expected. He had no fever, and his recovery was remarkably rapid. At the end of two weeks he felt better than he had for many years, and began to be ravenously hungry, but was allowed nothing heavier than peptonized milk and brandy. Since then he has entirely recovered and is gaining rapidly in flesh. He weighed 100 pounds two weeks after the operation.

"When the pathologist examined the stricture removed from Robinson he found an ordinary pin fast in the middle of the tumor. About this, as a center, ulceration had taken place, and the scars of these ulcers had caused the tumor and the stricture. When told of this circumstance Robinson recalled having swallowed the pin thirty years ago while holding it in his mouth."

The account of the case in the *Globe-Democrat*, is very interesting, and written in the usual happy style of the newspaper correspondent. We hope to see a report from a more careful pen.

EDITORIAL NOTES.

SCARLET FEVER at Palmyra, Wisconsin, has caused the schools of that place to be closed.

MALIGNANT DIPHTHERIA, according to recent reports, is prevalent in the neighborhood of Hawthorne, N. J.

HOG CHOLERA IN OHIO.—Local papers state that hog cholera prevails in Hancock Co., Ohio. In Portage township alone more than 6,000 hogs have died of the disease.

A CASE OF COCAINE POISONING has recently occurred in San Francisco. It seems that the sufferer took the drug without medical advice. The man was taken to a hospital, where he recovered.

A CASE OF SMALL-POX IN OMAHA seems to have aroused not only the Board of Health but the whole population of that city, and vigorous measures are being taken to prevent the spread of the disease.

YELLOW FEVER IN FLORIDA.—The yellow fever persistently continues to find new victims in Florida. November 12th thirty new cases were reported in Jacksonville and three deaths, making the whole number of cases reported to date 4511, and the total deaths 388. One new case was reported in Gainesville, Fla.

TRANSPLANTATION OF THE CORNEA.—On October 5 a little girl, aged 4 years, in Norristown, Pa., had the cornea of a rabbit transplanted in her eye. She was discharged from the Hospital on October 31, with favorable prospects for recovery.

THE McDOWELL MEDICAL SOCIETY met in Henderson, Ky., on November 2. About thirty members were present. Several papers were read and discussed. A grand banquet and hop was tendered the Society by the local members at the Barrett House. The Society will meet in Owensboro on May 3, 1889.

A PECULIAR DISEASE.—Bailey Walters, a prominent resident of Osage Township, Parsons Co., Kansas, died recently, in the 57th year of his age, with a peculiar malignant fever which is epidemic in that neighborhood. Within two months Mrs. Walters and two sons have died, and the remaining three members of the family are sick with the same disease. Last week James Smith and Geo. Mayes died, and four of the latter's family are sick with the fever.

CARCINOMATOUS ULCERATION OF THE AORTA was the cause of death on October 15 of a patient upon whom Dr. James Murphy performed gastrostomy for carcinomatous stricture of the œsophagus on September 9, 1887—the patient having lived 402 days. The immediate cause of death was hæmorrhage from the descending aorta, which had been ulcerated into by a carcinomatous mass.

THE "MARITIME MEDICAL NEWS" is the title of a new bimonthly journal printed at Halifax, N. S. The first number, for November, contains an address by Dr. P. R. Inches before the New Brunswick Medical Society, an address on the Nova Scotia medical act by Dr. William McKay, the report of a case of dilatation of the stomach, by Dr. Page, of Truro, and other interesting matter.

THE "UNIVERSITY MEDICAL MAGAZINE," the first two numbers of which (October and November, 1888) have been received, is edited under the auspices of the alumni and faculty of the University of Pennsylvania, and published by A. L. Hummel, of Philadelphia. The numbers at hand are filled with interesting papers, clinical memoranda, etc., and if merit is an indication of future success the *University Medical Magazine* will succeed.

EXTRALITE is the name of a new explosive, said to be twice as powerful as dynamite, and much safer to handle. It cannot be exploded in the open air, nor by concussion. It seems that it must be confined (tamped) and exploded by means of a fuse. Its safety should make it a popular explosive. The French Government is said to have paid one million francs for the right to use it. It is to be manufactured in this country in New Britain, Conn.

AN OPTICAL DELUSION.—The following is from the *Philadelphia Times* in regard to a young woman who has had one of her eyes replaced by a rabbit's eye, as it seems: "Miss Fisher told a reporter for the *Times* that she could see out of the right eye nearly as well as ever, and that she read quite well with it. Closing the right eye and looking with the rabbit eye, she said she could see to move about the room without stumbling over anything, and she could also count her fingers. At the reporter's request she removed her glasses, and then closing her right eye she was able to describe the movement of the reporter's hand, and in other ways show that, while the sight in the 'rabbit' eye is imperfect and limited, she can see with it." Perhaps, however, it was a case of transplantation of the cornea.

GETTING AHEAD OF DISEASE.—DR. P. R. INCHES, in a recent address before the New Brunswick Medical Society, instanced the city of Edinburgh as showing the benefits resulting from the intelligent use of sanitary and preventive measures. In 1862 the population of that city was 170,000, the deaths 4,661. In 1886 the population was 211,400, but the deaths were only 4,149—a fall of death-rate from 26.65 to 19.62 per 1,000; and the change took place mainly in the diseases most influenced by sanitary precautions—the zymotic class. In 1862 that group accounted for 19.73 per cent. of the total deaths, but in 1886 for 8.34 per cent. only, and this change represents a continuous fall in the percentage. In some of the poorer and over-crowded districts of the city there was a decrease of mortality varying from 3.77 to 20.71 per 1,000. Such diminution of mortality implies an immense saving of life, and is attributed by the authorities to relief from over-crowding, to the opening of new streets and breathing places, better water-supply, new drainage, improved plumbing, and to the system of

notification of infectious diseases, and the isolation and removal of the infected, and disinfection of the place.

OBJECT TO A LICENSE TAX.—It seems that the City Council of Salt Lake City have imposed a license tax upon physicians. At a meeting of the Salt Lake Medical Society, held on October 30, the following communication was passed and sent to the City Council :

At a regular meeting of the Salt Lake Medical Society the action of your honorable body relative to licensing the practice of medicine in this city was discussed. The result of this discussion was, that the present committee was appointed to wait upon the City Council and ask for a reconsideration, for the following reasons :

1. That a license imposed upon one of the liberal professions is unusual, and especially out of place as imposed in the medical profession, because physicians, as a rule, attend to the poor of the city in charity, and do a great deal of work without recompense.

2. If the object of the license is to raise the standard of the medical practice, thereby protecting those in the community incapable of judging the merits of a physician as against the illegitimate practice of medicine, we think the ordinance fails to meet such ends for these reasons: The class of medical men known as quacks draw about themselves a following, which pays them enormous fees, so that they are better able to pay a tax than the honest, conscientious, regular medical man. The quack pays his tax, does his business, the community is not protected, and the standard of the medical practice is not raised.

We would add that the medical society is heartily in accord with any movement which will raise the standard of medical practice in this city, and which will exclude those men known as quacks, and to effect this result we would suggest to your honorable body that such methods be adopted as are found in other communities, as the establishment of an examining board to investigate the merits of all wishing to practice medicine, which will grant certificates of recommendation for license—the fee being a nominal sum. We would respectfully ask your consideration of the above, and that your honorable body will repeal the tax which appears so unusual.

SOCIETY PROCEEDINGS.

Medical Society of Virginia:

Nineteenth Annual Session, held at Norfolk, Virginia, Oct 23, 24, and 25, 1888.

TUESDAY, OCTOBER 23—FIRST DAY.

The Nineteenth Annual Session of the Medical Society of Virginia convened in the Hall of the Young Men's Christian Association, Norfolk, Va., Tuesday, October 23, 1888, at 7:30 P.M., THE PRESIDENT, DR. BENJAMIN BLACKFORD, of Lynchburg, Va., in the chair, and Dr. Landon B. Edwards, of Richmond, Va., Recording Secretary. The Hall (capacity about 400 seats) was well filled—a number of ladies and gentlemen not Fellows of the Society being in the audience. About 180 Fellows in all were registered as in attendance during the session—the largest number ever in attendance upon any session of the Society. In addition, Dr. John B. Hamilton, Sup. Surg. Gen. of the U. S. Mar. Hospital Service, of Washington, D. C., and Dr. Milton Josiah Roberts, of New York City, were present as invited guests.

After prayer, DR. HERBERT M. NASH, of Norfolk City, delivered a most cordial *Address of Welcome* on the part of the professions of the "twin cities" of Norfolk and Portsmouth.

DR. WILLIAM T. WALKER, of Lynchburg, was then introduced by the President, and delivered the *Annual Address to the Public and Profession*, announcing as his subject :

MOSES AND OTHER DOCTORS.

Dr. Walker stated that the hygienic laws of Moses have no practically adopted equals to this day. His march of 2,500,000 people for forty years through the arid desert, all the while observing a system of hygiene such as has never been known in the records of time, was marvelous. The most thorough cleanliness in all things was required of each person. Chlorine preparations are among the best germicides known to-day; and yet Moses anticipated this latter day discovery by requiring the preservation of meats, etc., by the use of chloride of sodium. He taught how to disinfect buildings after leprosy had infected them, or, if they could not be purified to destroy them by fire. His laws in regard to the marital relation are perfection. If our women were to follow the special laws laid down by Moses for their health, their would be but little need for gynecologists. It is claimed that *preventive medicine* must be the medicine of the future; but Dr. Walker proves from the records of Moses and those who followed him, that it was the medicine of the past. It is a striking fact in history that, while the other learned nations of

those ancient days had their high grade schools of medical learning, the Jews had none, for they did not need them so long as they observed the laws of Moses. Passing references were made to the medical records of Hippocrates, of Celsus, of Galen, etc., down to the time of the Great Physician, who came not to destroy the laws of Moses, but to fulfil them. Luke, the "beloved physician," was a scholar of the highest culture and a faithful friend to Paul in prison while it was a danger to himself to be such—illustrating that the true doctor does not flee when danger approaches. Touching allusions were made to the faithful doctors of Norfolk of 1855 when the terrible epidemic of yellow fever swept that city. Tributes were likewise paid to those doctors of Jacksonville and other places who, this year, are sacrificing their lives for the safety of the people. Credit is awarded to the late Dr. Crawford W. Long, of Athens, Ga., as the discoverer of modern surgical anæsthesia by ether. A eulogy is likewise passed upon the immortal Dr. J. Marion Sims. References were made to others who have taken up and further perfected the life work of these great men.

SIXTY-NINE NEW FELLOWS.

The committee on nominations recommended the applications of sixty-nine doctors, who were duly elected Fellows of the Society during the session.

WEDNESDAY, OCTOBER 24—SECOND DAY.

THE PRESIDENT called the Society to order at 10 A.M.

The Recording Secretary presented his report, which showed that during the year just ended, thirteen Fellows had died, and two had resigned Fellowship because of removal of residence from Virginia.

The *Executive Committee* (Dr. W. W. Parker, of Richmond, Va., Chairman,) reported that Dr. James Parrish, of Portsmouth, had been duly nominated to the Governor of Virginia for commission to fill the vacancy on the Medical Examining Board of Virginia caused by the resignation of Dr. L. Lankford, now of Norfolk, Va., which nomination was confirmed by the Governor.

The constitution of the Society was so amended as to permit parties—always of the white race understood—to become Fellows of the Society who had secured certificates of satisfactory examination for license to practice in Virginia, whether graduates of medical colleges or not.

DR. THOMAS J. MOORE, of Richmond, presented the report of the committee appointed by the joint committees of the Medical Examining Board of Virginia, and the Medical Society of Virginia, during its last annual session, to petition the Legislature of Virginia to

AMEND THE EXISTING LAW.

The Committee succeeded in securing amendments in the two important particulars as follows:

1. Requiring all applicants for license to practice medicine in Virginia to stand satisfactory examinations before the Medical Examining Board of Virginia *in session*; or

2. In exceptional instances, for sufficient reasons, to be decided upon as such by the President of the Board, applicants may be granted permission to stand examinations before a Committee of three members of the Board—the Committee to hold the examinations *only in a session*, and not individually as formerly.

The special order of business at 11 o'clock of the morning of the second day's session being the "Annual Address of the President," and that hour having arrived, DR. BENJ. BLACKFORD read a well prepared address on *The Progress of Medical Education, and the Importance of the Study of the Physical Sciences in Relation Thereto, during School Life*. This address will be published in the volume of the Society's *Transactions*.

The subject for general discussion was next called for:

ATYPICAL FORMS OF TYPHOID FEVER.

The appointed Leader, DR. WILLIAM C. DABNEY, Professor of Practice of Medicine in the University of Virginia, opened the discussion by reading a paper on the subject. He took the ground that the disease had become distinctly milder of late years, and that the symptoms, such as diarrhœa, eruption, and the *gradual* rise of temperature which were formerly considered characteristic, are now often absent. That these cases are nevertheless cases of genuine typhoid fever, he considered proven by the following well established facts:

- (a) The cases usually present some of the peculiar characteristics of the disease.

- (b) Hæmorrhage from the bowels occasionally occurs in these cases.

- (c) The intestinal lesions characteristic of typhoid fever have been found on post-mortem examination.

- (d) These mild or atypical cases are capable of originating epidemics of typhoid character.

The conclusions arrived at by Dr. Dabney are thus stated:

1. The disease in this country is gradually becoming milder, and symptoms which were formerly thought to be characteristic and almost invariable are now much less frequently present.

2. The diagnosis of the disease is often attended with extreme difficulty, and in the early stages is generally impossible.

3. In those cases which are apparently extremely mild, dangerous symptoms may arise suddenly, and a fatal issue may ensue from errors in diet or other imprudence.

4. In all doubtful cases precautions should be taken to prevent the spread of the infective principle or germ, and to guard the patient against danger from imprudence.

5. The dangers to be especially apprehended in these cases are exhausting diarrhoea, hæmorrhage, and perforation of the bowel.

6. In view of these dangers, patients should be placed upon liquid diet; should be confined to bed; and constipation, when present, should be relieved by enemata, and not by purgatives, even of the mildest character.

DR. JOHN HERBERT CLAIBORNE, of Petersburg, said that the first point is the selection of a common ground upon which contestants may stand. In other words, a mutual but definite understanding of what each may mean by the term typhoid fever. The subject proposed—"Atypical Forms of Typhoid Fever"—supposes, of course, that there are "typical forms." What are these? By the expression *typical* he thinks we all agree that *representation* is meant—and a typical case of typhoid fever is understood to be a representative case. Now, what are the symptoms that *characterize a representative, or typical case*? In its generic or derivative sense, we should say that a typical case of typhoid fever should show at some time during its course symptoms of stupor, or at least, of dulness or hebetude of mind. There should also be noted a diarrhoea of peculiar form—that there should be a pathognomonic rose-colored eruption on or about the 14th day of the disease—that there should be epistaxis—ordinarily slight. We should say, again, that the fever was self-limited; that it was, perhaps, mildly infectious; that it oftener attacked adolescents; that it had its own recognized microbe; and that above all others necropsy should develop, distinctly and unquestionably infiltration and ulceration of the glands of Peyer. We might add to these general symptoms, slight bronchitis, gurgling in the right iliac fossa, headache, anorexia, tawny flesh of the cheek, and a temperature steadily and progressively rising and subsiding.

The question then arises, how many and which of these symptoms can we eliminate from a *typical* case in order to render it *atypical*? In other words, if typhoid fever be a disease marked by certain pathognomonic symptoms and pathological lesions, how many or what symptoms or lesions can we take out and still leave the disease an entity—a recognizable unit? And, if we are not in danger of multiplying words, are we not in danger of multiplying diseases to the confusion of diagnosis?

There is a fever, a summer and autumnal fever, common to many sections of Virginia which it has become fashionable to note as *typho-malarial fever*—a term that originated during the late war between the States, and for which the late Dr. Woodward of the United States Army was per-

haps responsible. At least he contended that it was a substantive fever, with its own symptoms and its own pathological lesions, and though he subsequently confessed that he was mistaken and recanted at the International Congress of Physicians, in Philadelphia, ten years later, the name has never perished. Wherever there is malaria now—and that seems ubiquitous—there we have typho-malarial fever. Dr. Cutter has published in parallel lines a differential diagnosis between typhoid fever and typho-malarial fever, which throws great light on this subject, and places the latter where, of right it belongs, viz., in the class of *ordinary bilious remittent fever*. Any fever, or any disease, may assume under certain unsanitary or depressing influences, a typhoidal character; but that does not constitute the peculiar intestinal, enteric, or typhoid fever to which we were introduced in our student days by Lewis, or Gerhard, or Wood; nor can we think that there is any blending of type in the two forms—any swapping or coincident or concurrent cultivation of the microbes peculiar to each. And in the treatment of these so-called typho-malarial fevers, the early, honest, and judicious administration of quinine will ordinarily cut short the attacks. He has rarely seen one of these hybrid fevers run into a typhoid condition unless there was delay in the exhibition of the great antiperiodic, or it were given in pills or capsules and, per consequence, undigested, or unless there was present some real or imagined idiosyncrasy preventing the use of this agent. When the fever persists in spite of this treatment you may suspect the correctness of your diagnosis, or know that there is some local cause of irritation apart from malaria. In his experience, a mild mercurial every night, guarded or not with some preparation of opium, according to the condition of the bowels, and from twenty to thirty grains of quinia at the period of remission, with fifteen grains of antifebrin, or thirty grains of antipyrin during the period of exacerbation, in three equally divided doses, will ordinarily cut short the fever in from three to eight days.

DR. W. G. ROGERS, of Charlottesville, presented a paper tending to strengthen the evidence already existing that *drinking water polluted by sewage* is a most fruitful source of typhoid fever. Previous to the establishment of the Charlottesville Water-works by which pure mountain water is now supplied to the city there was much typhoid fever. Then his place was supplied with well water contaminated by surface drainage, etc. But now typhoid fever is comparatively rare, and the cause of the few cases that are occurring is traceable to the fact that the parties use well water. Of the total of fifteen cases of this disease seen by him within the past two months, all were users of well water, which wells were plainly the receptacles of contaminated surface drainage. As illustrative of *atypical* forms of typhoid fever seen

by him, he mentions one with very slow pulse in a boy 10 years old. He also had all the usual signs and symptoms of typhoid fever except fever itself. His pulse varied from 48 to 50 for three weeks; and during the same period of depressed pulse, especially during the evenings, his temperature was subnormal—varying from 96° to 98° F. He reported also two slow-pulse cases, occurring in sisters, aged 12 and 14 years, respectively, sick at the same time; but the other prominent symptoms of typhoid fever were wanting, and the disease was definitely diagnosed simply by the fact that four typical cases were present in the same house at the same time—all due to the one cause of drinking contaminated well water. One slowly improved and was convalescent in two months; the other sister died from asthenia at the end of the fourth week. Autopsy revealed deep ulcers of the ileum, but no perforations. These girls developed a disposition to sing throughout the disease—a disposition not before developed. He reported another case, in a girl 17 years old, in which the average morning temperature (106° F.) was higher than the evening (104° F.). She apparently passed into a comatose stage several times, from which she was relieved by stimulants—an odd fact in itself. He also reported a uræmic case relieved by jaborandi.

DR. THOMAS J. MOORE, of Richmond, asked Dr. Dabney if he recognized such a fever as typho-malarial? The reply was, Yes, but he thought it was the product of two diseases in the system at the same time.

DR. S. K. JACKSON, of Norfolk, read a paper relating to some points in the

TREATMENT OF TYPHOID FEVER BY THE SALTS OF AMMONIUM.

(See THE JOURNAL of Nov. 24.)

DR. LEWIS G. PEDIGO, of Roanoke, stated that he has found great difficulty in diagnosing some cases of fever recently occurring in his section; but they were finally recognized as atypical forms of typhoid fever—the peculiarity consisting chiefly in the high temperature from the very commencement of the attack. It was the form of cardiac typhoid fever spoken of in some of the books, in which there was early failure of the heart. There was great difficulty in controlling the temperature throughout the attack, especially during the latter stages, and the disease ran a very rapid and generally fatal course. The difficulty of differential diagnosis was chiefly between cardiac typhoid fever and a type of continued malarial fever occurring in some localities, mostly about the mountain regions. Even in these malarial types, as also in typhoid fever, quinia does harm. It certainly should not be given in larger quantities than about 5 grs. in twenty-four hours. From the onset to the decadence of the fever, muriatic acid should be given in repeated doses each

day. Antipyrin is also useful, and when he associates the acid with antipyrin, he thinks he has made the best therapeutic combination.

DR. JOHN H. NEFF, of Harrisburg, said that he could confirm what had been so well expressed by Dr. Dabney, though his fields of observation were different. During the past summer he has seen many cases of atypical typhoid fever like those described by Dr. Dabney. There was some difference of opinion expressed in his vicinity as to the nature of these cases—one observer holding that they were malarial. He did not believe there was a malarial miasm in Harrisburg. Early recognition of these cases was very important. Treatment consisted in absolute rest and diet; individualizing each case. He thought typho-malarial fever a misnomer. We might as well say pneumonia-malarial, dysentery-malarial, etc. Environment modified all diseases. He could not endorse Dr. Jackson's ammonia treatment, and did not believe in any specific for the disease.

In answer to a question by Dr. S. K. Jackson, Dr. Neff stated that he had been using the nitrate of ammonia treatment, etc., advocated by Dr. Jackson, for a few months—sufficiently long to persuade him not to depend upon it in the future.

THURSDAY—EVENING SESSION.

DR. C. T. LEWIS, of Clifton Forge, read a paper devoted principally to a

NEW TREATMENT OF TYPHOID FEVER.

He thinks if he can keep the secretion of bile anywhere near its normal quantity and condition, the disease will run a mild and favorable course, because the bile will destroy, or prevent the germs of typhoid fever from finding lodgment in the intestinal canal, or will remove or destroy them if reached. Mercury in some form is about the best and the most commonly used cholagogue. Mercuric chloride is especially recommended on the ground that it neutralizes the toxic product of the disease germs, without destroying the animals themselves, and acts most decidedly upon the liver as a cholagogue. The bile flows into the bowel and acts as a germicide and antiseptic. But after awhile, the continuous use of mercury brings out its own poisonous effects upon the human system, depressing especially the nervous forces, so as finally to bring about a typhoidal condition. It may even cause diphtheritic ulcerations of the intestines, upon which podophyllin, rhubarb, jalap, euonymin, etc., produce a uniform bile secretion, but they irritate the bowels—they are purgatives as well as cholagogues. Ox-bile—theoretically suggested as the correct drug—has been practically tried, but failed to accomplish what was wanted of it. After careful consideration of all the facts, Dr. Lewis now adopts the following plan of treatment: At intervals of two

hours give three doses, but not more, of a powder composed of 2 grs. of calomel and 1 of rhubarb. After this, throughout the whole course of the disease, night and day, give 10 drops of dilute nitro-muriatic acid in a wine-glass of water every two hours. Also give a quarter-glass of fresh milk every three hours, night and day. If the acid and milk come at the same hour, give the acid first, as it gets out of the stomach sooner than the milk. If the patient becomes restless at night, give 2 grains of Dover's powder every two hours, beginning about 2 o'clock in the afternoon, until four doses, and no more, are administered. If the fever rises above 103° bathe the shoulders, upper part of the chest, neck and arms, in cold water every twenty minutes, with a basin of cold water by each side of the patient for his hands to play in; and cloths wet with the same cold water are laid around the neck and on the bowels. The result of this plan is that of 180 cases so treated by Dr. Lewis, only four deaths have occurred, and these deaths were the results of preventable causes by the patients themselves. Be careful not to allow solid food until the patient is well convalescent.

DR. ALBAN S. PAYNE, of Markham, totally differed with Dr. Lewis. The old treatment of Dr. George B. Wood was the best. If Peyer's patches were ulcerated, nitro-muriatic acid would do them injury as an irritant in such a fever.

DR. GEORGE T. WALKER, of Vinton, asked if it was a sufficient length of time to allow two days after the fever leaves before letting the patient take any solid food? Dr. Lewis replied that two days was ordinarily long enough. Then he begins by giving a small Irish potato and a little light bread.

DR. WM. W. PARKER, of Richmond, gives a little chicken soup as soon as possible. It is easily digested and is nutritious, and is not irritant to the inflamed ileo-cæcal region of the bowels.

DR. GEORGE E. WILEY, of Abingdon, asked Dr. Lewis if he ever gave any antipyretics during the course of the fever? Dr. Lewis answered that he did not, except the cold water baths, to which he had referred.

DR. J. H. NEFF, of Harrisonburg, said that he had no faith in any routine treatment of typhoid fever. Early diagnosis is most important. In many cases, absolute rest, both mental and physical, absolute diet, proper surroundings, with good nursing, etc., will lead to recovery. Each case must be individualized and treated according to its symptoms. Some patients cannot take milk. In such cases, he gives chicken and beef soup. Antipyrin, antifebrin, quinine, etc., often ameliorate the symptoms, according to his experience. Morphia often acts well in inducing sleep, easing pain and lowering temperature. Observation shows that quinine is still a good anti-

pyretic—especially in the afternoon—and in many cases does not irritate the stomach, or depress the system, like antipyrin and antifebrin. Opium is often also a splendid antipyretic. But sponging the body with cold water, often repeated, allows us generally to dispense with antipyretics. Aperients are not indicated in any stage; he relies upon enemata to relieve constipation. The mortality of this disease is greatest between the ages of 20 and 30 years. When hæmorrhage from the bowels occurs, he gives opium and enjoys perfect rest.

DR. HENRY M. PATTERSON, of Staunton, spoke of the atypical form of typhoid fever, which starts off with *high* fever and headache. In such cases, we must give some such remedy as antipyrin. Quinine also acts well in these cases. If, however, the sudden onset of high fever and headache spoken of is followed by a chill, the case is not one of typhoid fever, but is a continued fever of another kind. In regular or typical cases of typhoid fever, he has had good effects from aconite as an antipyretic.

DR. WILLIAM L. ROBINSON, of Danville, stated that typhoid fever varied in different sections, being modified by malaria and hygienic surroundings. An uncomplicated case of typhoid fever commencing with general malaise, moderate fever, dry tongue, quick, corded pulse, gradually increasing temperature, reaching its acme at the end of the second or third week, subsultus, tympanites, tenderness in the right iliac region, hot dry skin, delirium, etc., requires conservative management, such as moderate quantities of liquid diet, avoiding that excess which fails of digestion, and produces fermentation and diarrhoea. Turpentine is a diffusive stimulant and antiferment, as is carbolic acid, in connection with tincture of iodine. High temperature produces changes in the blood and parenchymatous degenerations, which weaken the muscular power of the heart. Antipyrin in moderate doses quiets the nervous system, reduces temperature and does much less harm than continued high temperature. The rectal use of digitalis, opium and whisky well sustains the flagging circulation. The use of alcohol in fevers, as recommended by Dr. Flint, in his paper before the International Medical Congress, he fully endorses. He believed in guarding the stomach and guiding the patient through the attack. He could not concur with Dr. Lewis in the use of ten drops of nitro-muriatic acid every two hours, and a quarter of a glass of milk, because it would, in such quantities, produce irritation of the alimentary canal and coagulate the milk, and cause fermentation and gas.

In reply to the criticism, he stated that while nitro-muriatic acid in proper proportions, aided digestion of milk, yet, in the quantities suggested by Dr. Lewis, it would produce results first claimed. He stated further, that the patholog-

ical condition of the alimentary canal in typhoid fever implied ulcerative and inflammatory conditions, and it was a well known fact that, even in ordinary ulceration of the stomach, an absolute alkaline condition offered the only redress. He therefore concluded that such an amount of acid as was suggested, was irrational. He urged upon the Society to be slow in accepting the statistics of a limited number of cases as proof of the efficacy of any line of treatment, for the epidemic might have been, and most probably was, of a mild type, and needed little treatment of any kind. He believed that ten drops of nitromuriatic acid every two hours, and a quarter glass of sweet milk, would, if persistently used, put any healthy man in bed in forty-eight hours. He had not heard the paper and discussion, prior to his coming in the room, but he was convinced that that form of fever which presented excessive high temperature in the beginning, clean tongue, a pulse not exceeding 100 a minute, good digestion, no diarrhoea or tympanites, etc., would be materially modified by quinine, because malaria was the complication.

DR. HUGH T. NELSON, of Charlottesville, said that he had received his medical education in Piedmont, Virginia. At that time typhoid fever was considered *the fever* of the section; and upon settling in a section of the State, in which malarial diseases were of frequent occurrence, he frequently thought he saw cases of typhoid or enteric fever; and subsequently, upon removing to Charlottesville, he had seen a good many cases of continued fever, some of which resembled the cases he had seen in the Lower Country; while other cases differed from it in many particulars. The important point was to decide in any given case of continued fever, whether or not he had present a disease, which had its starting point in *irritation*, and subsequent inflammation of the intestinal glands. Unless this point could be determined, there was no certainty that we had typhoid fever. Hæmorrhage from the bowels occurred by passing congestion in cases of fever in which, though the interval glands showed congestion also, there was no ulceration, and no actual acute inflammatory condition. In another class of continued fever, the hæmorrhage, when occurring, occurred by an acute inflammatory process, which destroyed the previously much enlarged intestinal glands and the blood-vessels supplying them—the general mucous surface of the bowel remaining intact, or else only showing slight *active* congestion, evidently secondary to that occurring in the glands. He believed this to be the characteristic form of hæmorrhage in typhoid fever. These were certainly *typical* cases of this typhoid or enteric fever; but many cases are no doubt put in the category of typhoid fever which do not properly belong there. The importance of a differential

diagnosis cannot be overestimated in the study of continued fevers, so that proper treatment may be instituted.

DR. LEWIS G. PEDIGO, of Roanoke, objected to certain doctrines laid down by Dr. Robinson. The great effort now being made to arrive at a specific treatment of typhoid fever will finally bring about a tangible result. The trend of medical thought and medical practice in this connection is toward the chlorine group. He believes that the proper use of some member of this group of germicides will ultimately furnish the key to the solution of the great problem. He criticized Dr. Robinson's objection to the acid treatment by suggesting that muriatic acid as an important agent in the process of digestion; and so far from aggravating the already existing irritation of the alimentary canal, it has a tendency to relieve such irritation by *preventing* fermentation, which produces the irritating agents.

DR. C. T. LEWIS does not believe that nitric acid prevents putrefaction.

DR. L. B. ANDERSON, of Norfolk, stated that all the speakers had seemed to assume that bacteria are pathological factors, whereas they never have been, and never can be such. They are of vegetable and not animal origin. He has never seen any signs of life in any vegetable or animal matter, or laudable pus from anthrax, furuncle, abscess, or gonorrhoea, until it has been exposed to the air under suitable temperature—until, in short, fermentation or putrefaction had developed. Bacteria, therefore, are a product, and not a cause of fermentation or putrefaction. We should rather look upon bacteria as the best friends the doctor has for preserving health.

(To be concluded.)

Medical Society of the District of Columbia.

Stated Meeting May 23, 1888.

CHARLES E. HAGNER, M.D., VICE-PRESIDENT,
IN THE CHAIR.

DR. G. WYTHE COOK presented the specimen and read the history of a case of

CANCER OF THE INTESTINE.

(See page 699).

DR. BUSEY: The specimen presented by Dr. Cook is very interesting and presents unusual conditions for a malignant growth. It looked like a cyst that had sprung from the uterus. He moved its reference to the Microscopical Committee. Carried.

DR. H. L. E. JOHNSON presented the specimen and read the history of a case of

FIBROID POLYPUS OF THE UTERUS.

History.—Mrs. T., white, æt. 33, four children

and no miscarriage. Last child delivered by me two and a half years ago; labor normal. Has always been healthy. Menses normal, lasting seven or eight days. Has complained of no special symptom till about five months ago, when she noticed an excessive leucorrhœal discharge, which increased steadily in amount and became more offensive till the odor could be noticed anywhere about the house. She had weakness, nervousness and backache.

Examination showed vagina filled and distended with a decomposing soft mass about the size of a foetal head, breaking down under the least pressure. Its point of attachment could not at the time be made out. After removing the vaginal portion by forceps the vaginal walls were found to be covered here and there by large ulcerated patches caused by pressure, and the cervix was covered with granulations which would bleed on the slightest pressure. It looked like a malignant carcinomatous condition. The sound passed 7 inches into the uterus. The mass was found to be attached principally at fundus uteri, and at points in cervical canal.

On May 7 the patient was anæsthetized by Dr. D. K. Shute, and being assisted by Dr. James T. Young, I dilated the cervix (cervical attachment having been separated before) and passed the ecraseur as far as the fundus and around the growth separating it. Applied tincture of iodine (Churchill) to uterine cavity. No hæmorrhage followed; nor pains, nor soreness. Required no further treatment. Patient up on eighth day, well. Vagina and uterus normal. It is interesting and peculiar, as there was no hæmorrhage nor menorrhagia, and that so large a decomposed mass produced no septic symptoms. After separating the cervical attachment of the growth septic symptoms developed from absorption through denuded healthy surfaces. These were relieved by antiseptic injections and the application of a saturated solution of chromic acid.

DR. REYBURN: To what did Dr. Johnson attribute the septic symptoms after operative interference?

DR. JOHNSON: It resulted from the breaking down of the attachments to the cervix.

DR. SAMUEL C. BUSEY read a paper on

NEURALGIA OF THE LINGUAL BRANCH OF THE RIGHT TRI-FACIAL NERVE.

(See page 697).

DR. J. TABER JOHNSON: Was electricity tried in Dr. Busey's case?

DR. BUSEY: It was suggested, but the patient was unwilling to try it.

DR. A. F. A. KING: The attacks started after reading aloud for some time. The woman was not accustomed to it and this would be an unusual use of the tongue for one 57 years old. This evidence was corroborated by the fact that talking

and masticating produced pain. What remedies had been used? Was she anæmic?

DR. BUSEY: The patient stated she had taken large quantities of quinia and other drugs; had been salivated; her face and jaw had been blistered; anodynes of every description had been used locally and hypodermatically; and she had grown worse all the time. She was not anæmic, but in good health. Mastication was interrupted, and she had to be very particular with her dietary. She could not eat bread and potatoes. After reading aloud for three or four weeks the first attack began and the paroxysms recurred at intervals until spring. These attacks recurred annually for seven years, at the beginning of winter. The summer of 1887 was spent in the North; she came here in November, and soon after went into a greenhouse and the paroxysm suddenly came on. She had derived comparative ease from small doses of morphia, but was not cured.

DR. SCHÆFER: Had suffered from tri-facial neuralgia caused by a carious tooth. He found that if he neglected his food the exacerbations were worse and the paroxysms lasted longer. He had advised systematic feeding and keeping the stomach full. This seemed to assist the remedies and have a beneficial effect. He had found the same experience with the temperature; they appeared in October and disappeared with the coming of spring. No two cases of neuralgia are alike. He derived great benefit from 2 grs. of opium, 10 grs. of quinia and 2 ozs. of whisky.

DR. REYBURN: Had had a patient under his care for neuralgia of the scalp, caused by cutting the hair very short. He was benefited but was subject to attacks afterwards. He was relieved by potassium iodide and cod liver oil. Had no evidence of syphilis. Dr. Busey's case might have been benefited by surgical treatment.

DR. J. FORD THOMPSON: In all such cases where medical treatment fails it is well to try surgical. To treat neuralgia of the lingual nerve surgically can only be practiced on the anterior part of the tongue where it is very superficial. The nerve might be cut on the side of the tongue and the neuralgia relieved, but such a procedure would be impracticable posteriorly, where the nerve is very deep. He then gave the histories of two very interesting cases of neuralgia of the tri-facial nerve, where operation had afforded some relief. In one he had cut the nerve at its exit from the foramen rotundum, and he had had relief for a year, but now wanted to be operated on again. But Dr. Thompson did not know what to operate on. He had tried electricity, but the patient was made very much worse. If he could locate a painful nerve he would operate. This is about the history of a great many cases of tri-facial neuralgia. He could only find recorded two successful operations.

DR. SOTHORON called attention to the value of

antipyrin in the treatment of neuralgia. He had treated several cases successfully with it in combination with morphia and quinia.

DR. HOWARD mentioned a case recorded in Sir Charles Bell's Memoirs. A child was treated for neuralgia with the usual methods then in vogue, and given up. Bell found green matter running out of its mouth, and found an abscess in front of the ganglion of Gasser.

DR. BUSEY: The history would exclude any local cause. He had considered the propriety of the operation referred to by Dr. Thompson, but had concluded it was impracticable, because these and, perhaps, other nerves were involved. He thought it probable that a better result might be obtained if the treatment tried during the past winter could be begun early and faithfully carried out. He had not supposed that the general subject of facial neuralgia would have been discussed, but had hoped that the peculiarities of the reported case would have commanded the attention of the members.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT)

Neurasthenia; its Differentiation and Treatment.

At the first meeting of the season of the Section on Practice of the Academy of Medicine there was an animated discussion on the much vexed subject of neurasthenia, which was introduced by Dr. Landon Carter Gray in an elaborate paper entitled:

"Neurasthenia; Its Differentiation and Treatment." Dr. Gray first directed attention to the fact that functional nervous diseases are largely disregarded by the general practitioner because of the modern development of the study of them, although the need of their proper classification was widely felt, especially by neurological specialists. For this reason it was that the writings of the late Dr. Geo. M. Beard had had such a success in Germany. Dr. Gray did not believe that properly so-called neurasthenia was as prevalent as the followers of Beard would have us believe. He stated that, in his opinion, there were three forms of neurasthenia: the reflex, the lithæmic and the simple. The reflex form was due to vicious habits and reflexes from non-nervous organs, the lithæmic was due to the condition known as lithæmia, and the simple form was that in which there was true nervous prostration. The points of differential diagnosis of these various forms were then dwelt upon. But, he said, neurasthenia was also to be differentiated from a number of nervous diseases, especially the early stages of the latter, such as the morbid fears (for which Dr. Gray suggested

the name of functional insanity), and which really belonged to the insane diseases and were often associated with them; melancholia, especially the mild cases, in which suicide was often committed; the early stages of mild chronic forms of insanity; neurotic conditions in which the individual is subject to migraine, hysteria, angina pectoris or anginoid attacks; the early stages of general paresis of the insane or of locomotor ataxia; and a peculiar disease described a year ago by Dr. Hughes Bennett, and called by him muscular hypertonicity, in which the symptoms are those of weakness and exaggerated reflexes of the lower extremities.

The prognosis of these different forms was variable, depending upon the severity of the reflex cause when present, and the possibility of thorough treatment. The treatment of the reflex form was the removal of the cause, if possible. The lithæmic form was to be treated by moderate laxatives, dilute nitro-muriatic acid and, if the nervous symptoms were severe, by rest. In any event, rest was a most important adjuvant, and should be proportioned to the needs of each particular case; it being better to have rather too much of it than too little. The diet should be regulated to a moderate degree by the entire withdrawal of either starchy or nitrogenous material for a short time, and then by the cutting down of the starchy material permanently by at least 50 per cent. In hot weather it was sometimes advisable to cut off the nitrogenous material for several weeks; and a complete change of air was often of the greatest benefit.

In the true cases of neurasthenia the best treatment was that advocated by Dr. Weir Mitchell, of rest, forced alimentation, massage and Faradism. Large doses of iron and malt extract should also be given in this treatment, the great difficulty with which was, however, that patients are apt to be disappointed at the loss of their muscular strength upon first getting out of bed. It should be explained to them that this would gradually return; but great care was necessary with many patients at this period to prevent them from losing the flesh and red blood that had been gained. Galvanism was an agent of great value in all these forms of neurasthenia, and it should be used as early as possible, except when the case is to be put to bed. It should be applied by means of large sponges, one at the nape of the neck and the other on the dorsal spine, 5 to 15 milliamperes of electricity being used, and the sittings continued every day for from three to five minutes. Massage was an uncertain remedy, often irritating the patient, and was only to be used in connection with the rest treatment mentioned.

Dr. W. R. Birdsall thought that we must unquestionably admit a neurasthenic element in disease; yet at the same time, when we attempted to apply it to a group of symptoms, we found that

it often failed. In many individuals the nervous tendencies predominated as a result of hereditary influence, and it seemed to him that the great danger was in assuming that we had a congenital neurasthenic condition, when the symptoms were in reality due to local causes or merely temporary conditions. The class of cases which Dr. Gray called the lithæmic would probably comprise the greater number of these, and it was important that they should not be treated on the basis of an unstable or defective hereditary nervous system. If we were to use the term neurasthenia at all, then, he thought we should confine it to the class of individuals who suffer from inherited defective nervous systems, and with the proviso that it was understood to comprise a group of symptoms which might belong to various conditions.

Dr. Gray had stated, he went on to say, that in the class of reflex cases all that was necessary to do was to remove the cause. There was often, however, an acquired condition, the result of reflex irritation, in which the whole nervous system was at fault. The removal of a local cause, whether about the eye, the nasal cavity, or elsewhere, was not always sufficient. In many cases we were still obliged to treat the individual for other neurasthenic symptoms cropping out in different forms.

In lithæmic cases the question of rest or of exertion for the patient was one which he thought must be specially determined in each individual case. In many instances increased activity of a kind entirely different from that to which the patient had been accustomed constituted the most satisfactory means of treatment; and he knew of nothing so good as moderate mountain climbing with a pleasant companion, especially if there were any hypochondriacal elements in the case.

Dr. Wm. H. Thomson said that the term neurasthenia was, no doubt, a very impressive one to use sometimes to patients, but otherwise he abominated it. It ought to be placed, he thought, on the same level as tonic, a word that led to more bad practice than any other in medicine, since remedies which acted in all sorts of different ways were all called tonics. When a patient came to him affected with nervous debility without appreciable organic disease, he said he always put to himself the question whether the individual were not suffering from one of four causes, viz.: virtual starvation; over-strain; some unnatural drain on the system; self-poisoning. Those who were the subjects of virtual starvation (usually females), it would be found, ate no breakfast to speak of, and probably took for their other meals principally tea, bread and sweets. They did not get sufficient nourishment to maintain their respiration and circulation; and the rest cure was therefore the best for them. In the second class rest and food were also required, and oftentimes a change of surroundings. In the third class the

drain, whatever it was, should be checked if it could, and the patient would then get well. The fourth class, that of self-poisoning, was the most common of all, and it was well illustrated by a case that had recently been under his care. A gentleman came to him suffering from cloudy mind in the daytime and insomnia at night, and he was completely relieved by means of bismuth, columbo and naphthalin. Another similar case was also successfully treated with intestinal antiseptics.

It was only very recently, Dr. Thomson continued, that, after paying special attention to various divisions of the organism in turn, we are coming back to that old part of the body that our forefathers used to regard as of so much importance, the bowels. At all times fermentations were going on in the intestines, and at the best moments of our lives putrid ptomaines were going into the kidneys, the liver, and other organs. The trouble with such patients as he was now speaking of was that they were suffering from prolonged self-poisoning, resulting from a deficiency of the natural antiseptics of the intestines, viz.: the secretions. This was the lithæmic neurasthenia of Dr. Gray. Having referred to the quality of the pulse and the character of the urine, which served as useful guides, he said that he had faith in only one real cure, and that was tent-life in the woods.

Dr. A. Jacobi said that of late it had been the tendency in medicine to get rid as far as possible of all names given to symptoms merely, and neurasthenia was of this class. We could speak of it only as a symptom, and it was a symptom common to so many conditions that the sooner it was abandoned the better. It was not simply weakness alone; we had been told that it was a chronic malnutrition of the nervous centres, due either to various adventitious causes or to an hereditary tendency. But congenital neurasthenia did not exist alone. With it was associated weakness of the circulation and the whole constitution. In every case of so-called neurasthenia, then, it should be our endeavor to make a diagnosis, if possible, of the original condition that gave rise to the symptoms met with.

Dr. A. D. Rockwell said that although unprepared to discuss the question at length, he could not refrain from the statement that he believed in the existence, just as he did in that of malaria. The term was, with limitations, a valuable one; although he thought it had been very much abused. The most important point of differentiation was between primary nervous exhaustion and lithæmia.

Dr. S. Baruch said that he was convinced that there was a complex of symptoms which was best designated by the term neurasthenia. In its treatment the principal indication was to prevent tissue change, and there was perhaps no better

method of securing this than hydro-therapy. Many of his patients suffering from this trouble he directed to take a cold plunge-bath every morning; care being taken that prompt reaction followed. He still believed in the term tonic also, and he thought the cold plunge one of the most valuable tonics that we had.

Dr. E. D. Fisher thought the word neurasthenia would be a very convenient one to retain until our knowledge of nervous diseases had become more complete than it was at present. The principal objection to its use was the danger of mistaking for the condition it implied some of the grave organic diseases, especially in the incipient stage; and it was necessary, therefore, that we should be on our guard in this respect. As regards the treatment of neurasthenia, since this condition represented merely functional disturbances, so far as we knew, uniformity was impossible, and each case must be handled according to its individual circumstances.

In closing the discussion Dr. Gray said that one of his objects in writing the paper was to elicit such an expression of opinion from various observers as had now been given. On the whole, it seemed to him that there was an immaterial difference between his own standpoint and that of those who objected to the term neurasthenia. There were certainly many symptoms not of organic origin which we could not classify without resorting to some such expression. It was, therefore, of practical service to retain it, and the subdivision into the three classes which he had indicated seemed to him a convenient one. In the future such advances would no doubt be made that many points which were now obscure would be cleared up, and many of our views would accordingly be modified.

P. B. P.

Cataract Extraction.

Dear Sir:—I read with great interest the article on "Cataract Extraction, etc.," by Julian J. Chisholm, M.D., in *THE JOURNAL* of November 3, 1888. I think Dr. Chisholm is correct in reducing restraints put on patients after the extraction of cataract. I have been an advocate of such a measure, as not putting the patients to bed afterwards, or if at all for a few hours only, for some years. Since my connection with the University of Louisville I have operated on, in the amphitheatre there, 40 or 45 cases of senile cataract. These patients have each walked or rode from five blocks to five miles immediately after the operation, and I have to record the first case in which any serious inflammation has followed, in the person of a man over 80 years old, who removed his bandage the second morning and took a walk. I believe, with Dr. Chisholm, that with less restriction the eye does fully as well and the patient's general condition is left much better.

I regret though to see Dr. Chisholm apologizing for, or rather trying to account for his average of success, by saying, in reply to Dr. Knapp, that his assistant, "Dr. Belt has explained in his paper how these cases were failures in seeing, even when no inflammatory complication had arisen during the after-treatment of the cases; and how an ophthalmoscopic examination showed glaucoma, nerve atrophy and choroidal patches."

Is it customary to operate on such cases? Is it not nearly as possible to make such a diagnosis before the extraction of the cataract as afterwards? As the saying goes, "What is the matter with the candle test of the visual field? Let us show mercy, and consideration for the comfort of those who must submit to our dictation," by dictating that an operation is not advisable under such conditions as no vision will result. You cannot have a disease of the front of the eye which will shut out quick perception of light if the retina, choroid and optic nerve are sound. I never extract or needle a cataract without making the candle test of the visual field. Dr. Chisholm will find in the book commonly used for recording cases of cataract extractions a place for such a record, marked "visual field."

Yours,

W. CHEATHAM, M.D.

303 Chestnut St., Louisville, Ky., Nov. 7, 1888.

Sour Milk and Buttermilk in the Prevention and Treatment of Diphtheria.

Dear Sir:—The quoted article on "Diphtheria in Cats," in a recent issue of *THE JOURNAL*, reminds me of a case of this disease occurring in a favorite Maltese cat of mine many years ago, and for the relief of which I ordered *sour* milk and buttermilk, which she eagerly took and speedily recovered. These were exhibited as comprising the essential nutritive and remedial properties combined in an acceptable form, and to satisfy the instinctive desire for acidulous substances existing in diphtheria with kindred diseases. The milk is most nourishing and partly predigested, while the lactic acid therein, to which they owe their medicinal power, is an active digestive, depurant, refrigerant, antiscorbutic, antiphlogistic, antiseptic and febrifuge, solvent of the fibro-plastic membranous exudate, and general resolvent of this disease with collateral maladies. They are hence generally applicable in the preventive and curative treatment of scorbutic, malarial, inflammatory, infectious, contagious and pernicious diseases, local and constitutional, both in the inferior animals and human beings. Therefore, if people would drink sour milk and buttermilk, sweetened if desired, and give them to dependent children and the lower animals, instead of throwing them away as worthless, thus wasting a valuable nutritive and medicament, they would protect themselves and subjects largely against and

relieve some of the most pestilential and virulent diseases known, as well as many of the minor ailments of life. Alone or in conjunction with the mineral and vegetal acids, and other suitable nourishment and remedies as specially indicated, I have exhibited them for many years and can fully testify to their superior value as nutrient, preventive and resolvent agents in such maladies. Sour milk and buttermilk thus act both as valuable, agreeable food and medicine that can be used *ad libitum*, besides being cheap, abundant and convenient. Each should be taken frequently as an effective digestive, antalkaline, and prophylactic to neutralize the superalkalinity of blood and system as often occurring, and to ward off or relieve diphtheria, scorbutic, inflammatory and pestilential maladies of every grade and character, in cats, dogs, pigs, and other inferior animals, in common with mankind.

GEORGE J. ZIEGLER, M.D.

November 11, 1888.

BOOK REVIEWS.

THE LIFE INSURANCE EXAMINER. A Practical Treatise upon Medical Examinations for Life Insurance. By CHARLES F. STILLMAN, M.S., M.D., Medical Examiner for the Mutual Life Insurance Company; Examining Surgeon of the Travelers Insurance Company of Hartford, etc., 8vo, pp. 186, 16, viii. New York: The Spectator Company. 1888. Chicago: W. T. Keener.

The medical examiner for life insurance occupies an important position; a careless or incomplete examination will generally result in injustice to the applicant for insurance or to the company. The lines of procedure of the medical examiner are being drawn more sharply and closely, and the time has come when the examiner must be exact, or as exact as possible, and must render decisions based on scientific facts, so far now known.

Dr. Stillman is well known by his work in orthopædic and general surgery, and for exactness and completeness in all the work he undertakes. The book before us is divided into three parts, the first dealing with "Life Insurance Formalities," the medical examiner's report, instructions to medical examiners, the agent's report, and instructions to agents. Part II treats of "Examination of the Applicant," identification, environment, physique, physical diagnosis. Part III relates to the "Diseases relating to Life Insurance," hereditary influences, nutrition and diathesis, etc. An appendix contains legal questions relative to medical examiners, and other matter, including life insurance statistics.

The book contains a superimposed dissected colored plate of the anterior aspect of the body, made by the author, an engraving from life of a candidate stripped for an insurance examination, and a number of engravings of the microscopic appearance of urinary deposits. Life insurance methods are now far beyond those of a dozen years ago, and the books on the subject, written at that time are now out of date. The present work is for the active examiners for life insurance, and to them we can heartily recommend it.

THE MODERN TREATMENT OF DISEASES OF THE LIVER. By PROFESSOR DUJARDIN-BEAUMETZ. Translated by E. P. HURD, M.D. Published by Geo. S. Davis, Detroit, Mich. Pp. 185. Price 25 cents.

The volume before us is one of the Physician's Leisure Library Series for 1888. The translation is very well made. The book is most interestingly written. As is always true of what Dujardin-Beaumetz writes, much that is now in physiology, as well as what is now in the therapeutics of the diseases discovered, can be found here. The various chapters bear the following titles: The Liver from a Therapeutic Standpoint, Cholagogues, Treatment of Biliary Lithiasis, Treatment of Jaundice, Treatment of Engorgements of the Liver; Treatment of Inflammations of the Liver, Treatment of Hydatid Cysts of the Liver.

MISCELLANEOUS.

A TRAINING SCHOOL FOR NURSES has been opened in connection with the General Public Hospital at St. John, N. B.

DR. H. S. PIGGINS, who for a number of years has been practicing his profession at Caledonia, Minn., has removed to Duluth.

DR. FRANCIS J. GOULD, who died of yellow fever in Jacksonville, Fla., was a native of Lexington, Mass., and a graduate of Harvard, class of 1850. He was 60 years of age.

DR. JOSEPH O'DWYER, the originator of intubation of the larynx, has been appointed Professor of Diseases of Children in the New York Post-Graduate Medical School and Hospital.

MILK SICKNESS.—Isaiah Everly, of Patricksburg, Ind., died of milk sickness on November 1, his widow is seriously ill, and cattle have perished from the disease, which prevailed twenty-five years ago on the same farm.

NO EPIDEMIC AT DEMARARA.—A report from the U. S. Consul at Demarara to the Department of State says that there have been but two cases of yellow fever there, and that his bills of health while showing that the disease exists does not make it appear that it is epidemic.

CHARLES H. PHILLIPS, for many years a prominent manufacturer of chemicals, of New York city, died suddenly of apoplexy, on Nov. 5. He was a member of the

American Geographical Society, President of the C. H. Phillips Chemical Co., and connected with all the prominent societies in his line of business.

A TERRIBLE CATTLE DISEASE is raging in the Philippine Islands. In one province alone over 66,000 animals have died.

THE DISTRICT MEDICAL SOCIETY OF CENTRAL ILLINOIS will hold its semi-annual meeting in the Court House at Vandalia, on Tuesday, November 20, 1888. J. Huber, M.D., of Pana, is President, and J. H. Miller, M.D., of Oconee, is Secretary.

THE SECTION ON DISEASES OF CHILDREN of the American Medical Association, at the last annual meeting, appointed the following committee to investigate the subject of infant feeding, viz.: C. W. Earle, M.D., of Chicago; W. B. Atkinson, M.D., of Philadelphia; and W. S. Christopher, M.D., of Cincinnati, Ohio.

SIX CHILDREN AT A SINGLE BIRTH.—At Dallas, Tex., on Nov. 3, Mrs. Geo. Hirsh, of Navarro county, gave birth to six children. The mother and children are doing well. There are four boys and two girls. All are perfect and fully proportioned, but very small. The babies are all tagged, to preserve their identity.

DAMAGES FOR MALPRACTICE.—That the character of the medical school or sect to which a practitioner of medicine belongs does not relieve him from liability, is shown by a recent decision of the Supreme Court of Wisconsin. C. F. Harrington is a clairvoyant and physician of Madison. He treated a man named Thomas Nelson for many months for rheumatism, whereas he had hip disease, and by reason of this malpractice Nelson was crippled for life. He brought suit against Harrington for damages, and obtained a judgment of \$1,500 in the lower court. Harrington appealed, his contention being that he should be free from liability because Nelson was fully aware of the peculiar medical school to which he belonged. The Supreme Court confirmed the judgment of the lower court, holding that the question of the character of the medical school in no manner whatever relieved a doctor from liability for malpractice. This is the first time on record, we believe, that this peculiar phase of this question has come up in the high courts.

HEALTH IN MICHIGAN.—For the month of October, 1888, the reports indicate that tonsillitis, neuralgia, typhomalarial fever, influenza, bronchitis and scarlet fever increased, and that diarrhoea, dysentery, cholera morbus, decreased in prevalence.

Compared with the average for the month of October for the nine years, 1879-1887, the reports indicate that consumption of the lungs, intermittent fever, diarrhoea, remittent fever and tonsillitis were less prevalent in 1888. For the month of October, 1888, compared with the average for corresponding months in the nine years, 1879-87, the temperature was lower, the absolute humidity and the day and night ozone were less, and the relative humidity was about the same.

Including reports by regular observers and others, diphtheria was reported present at thirty-six places in Michigan in October, 1888, scarlet fever at thirty-two places, typhoid fever at forty-three places, and measles at seven places.

Reports from all sources show diphtheria at sixteen places more, scarlet fever at eight places more, typhoid fever at eight places more, and measles at the same number of places in October, when compared with the preceding month.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION will hold its first annual meeting at Birmingham, Ala., December 4, 5 and 6, 1888. The officers for 1888 are: President, Dr. W. D. Haggard, Nashville, Tenn.; Secre-

tary, Dr. W. E. B. Davis, Birmingham, Ala.; Judicial Council, Dr. John S. Cain, Nashville, Tenn., Dr. Hunter McGuire, Richmond, Va., Dr. J. M. Taylor, Corinth, Miss., Dr. DeSaussure Ford, Augusta, Ga., Dr. R. A. Kinloch, Charleston, S. C.; Chairman Committee of Arrangements, Dr. J. D. S. Davis, Birmingham, Ala.

FIRST DAY.—MORNING SESSION.

The Association will be called to order by the President at 10 o'clock, A.M.

Prayer by the Rev. D. I. Purser, D.D.

Address of Welcome, by Hon. A. O. Lane.

Reading of Minutes.

Report of the Committee of Arrangements.

Report of the Judicial Council.

Miscellaneous Business.

The Annual Address of the President, Dr. W. D. Haggard, Nashville, Tenn.

Papers.—Gastrostomy, by W. B. Rogers, M.D., Memphis, Tenn. Superinvolution of the Uterus following Trachelorrhaphy, by Virgil O. Hardon, M.D., Atlanta, Ga. Indications for Operative Interference in Cerebral Troubles, T. O. Summers, M.D., Jacksonville, Fla. A Case of Tubal Pregnancy, presenting Interesting Medico-Legal Relations, E. P. Sale, M.D., Memphis, Tenn. The Extravagancies and Impractical Requirements of Modern Antiseptic Surgery, so far as the Country Practitioner is Concerned, by J. M. Taylor, M.D., Corinth, Miss. Antiseptics in Surgery and Gynecology, by F. T. Meriwether, M.D., Asheville, N. C. My Antiseptic Bags; or Practical Aseptic Surgery, by J. W. Long, M.D., Randleman, N. C.

Adjournment at 2 P.M.

Excursion to North Birmingham at 3:45 P.M.

EVENING SESSION, AT 8 P.M.

The Annual Oration, by Dr. W. F. Hyer, of Meridian, Miss., at O'Brien's Opera House. After the Oration the audience will be entertained by the Mendelssohn Club.

SECOND DAY.—MORNING SESSION, AT 9:30 A.M.

Report of Treasurer.

Report of Judicial Council.

Miscellaneous Business.

Papers.—Floating Kidney, with Vicarious Menstruation, by DeSaussure Ford, M.D., Augusta, Ga. New Treatment of Intra-Uterine Fibroids, by E. J. Beall, M.D., Fort Worth, Texas. The Medical Treatment of Fibroid Tumors of the Uterus, by Bedford Brown, M.D., Alexandria, Va. Alexander's Operation, by W. L. Nichol, M.D., Nashville, Tenn. The Present Status of Electro-Therapeutics in Gynecology, by J. R. Buist, M.D., Nashville, Tenn.

Excursion to Gate City at 3:45 P.M.

EVENING SESSION, AT 8 P.M.

Hysterectomy in Cancer of the Uterus, by W. H. Wathen, M.D., Louisville, Ky. Fractures of the Forearm, by Jno. Brownrigg, M.D., Columbus, Miss. Treatment of Fractures with Plaster of Paris Splints, by W. F. Westmoreland, Jr., Atlanta, Ga. Interesting Cases of Surgery, by R. M. Cunningham, Pratt Mines, Ala. The New Departure in Uterine Therapeutics—the Dry Method, by T. A. Means, M.D., Montgomery, Ala. A Study of the Various Methods of Treatment of Laceration of the Perineum and Rectocele, with Report of Cases, by J. H. Blanks, M.D., Meridian, Miss. Perineal Lacerations, by M. C. Baldridge, M.D., Huntsville, Ala.

THIRD DAY.—MORNING SESSION, AT 9:30 A.M.

Report of Judicial Council.

Unfinished and Miscellaneous Business.

Papers.—Cystoscopic Explorations, by A. V. L. Brokaw, M.D., St. Louis, Mo. Shock of Injury and Its Effects, by Jno. R. Page, M.D., Birmingham, Ala. Some Practical Thoughts in Surgery and Gynecology, by James Guild,

M.D., Tuscaloosa, Ala. The Field and Limitation of Laparotomy, by I. S. Stone, M.D., Lincoln, Va. Operative Procedures in Epilepsy, by J. T. Wilson, M.D., Sherman, Texas. Surgical Tuberculosis, by W. Locke Chew, M.D., Birmingham, Ala.

AFTERNOON SESSION, AT 3 P. M.

Treatment of Certain Forms of Menorrhagia, with Report of Cases, by W. D. Bizzell, M.D., Atlanta, Ga. Electrolysis in the Treatment of Urethral Strictures, by S. M. Hogan, M.D., Union Springs, Ala. Operative Procedures in Hypertrophy of the Prostate, by R. D. Webb, M.D., Birmingham, Ala. Electrolysis in Morbid Alterations produced in the Prostate by Gonorrhœa of the Urethra, by J. D. S. Davis, M.D., Birmingham, Ala. Dermoid Cysts of the Coccygeal Region, by E. J. Beall, M.D., Fort Worth, Texas.

EVENING SESSION, AT 8 P. M.

Discussion—Abdominal Surgery.
Election and Installation of Officers.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from November 3, 1888, to November 9, 1888.

Lieut.-Col. Basil Norris, Surgeon, will be relieved from duty in the Department of the Columbia by the commanding General of that Department, and will report in person, on or before November 14, 1888, to the commanding General Div. of the Pacific, for duty as Medical Director of that Division and of the Department of California. Par. 14, S. O. 255, A. G. O., Washington, November 1, 1888.

By direction of the Secretary of War, Lieut.-Col. Edward P. Vollum, Surgeon, on being relieved from duty as Medical Director Dept. of Texas by Lieut.-Col. Joseph C. Baily, Asst. Medical Purveyor, under War Department order dated October 31, 1888, S. O. 255, A. G. O., will repair to New York City, assume the duties of acting Asst. Medical Purveyor, and take charge of the medical purveying depot at that place. Par. 2, S. O. 255, A. G. O., Washington, November 1, 1888.

Lieut.-Col. Charles T. Alexander, Surgeon, is relieved from further duty in the Dept. of Dakota, and will report in person to the commanding General Dept. of the Columbia for duty as Medical Director of that Department. Par. 14, S. O. 255, A. G. O., Washington, November 1, 1888.

Col. Joseph C. Baily, Asst. Medical Purveyor, is, at his own request, relieved from the charge of the medical purveying depot in New York City, and is, by direction of the President under the provisions of the Act of Congress approved June 23, 1874, assigned to duty as surgeon in the Medical Department. He will report in person to the commanding General Dept. of Texas for assignment to duty as Medical Director of that Department, to relieve Lieut.-Col. E. P. Vollum, Surgeon. Par. 1, S. O. 255, A. G. O., Washington, November 1, 1888.

By direction of the Secretary of War, Lieut.-Col. Joseph C. Baily, Asst. Medical Purveyor, will transfer at once the public funds for which he is now responsible to Capt. Henry Johnson, Medical Storekeeper, who will assume temporary charge of the medical purveying depot in New York City, retaining charge thereof until relieved in person by Lieut.-Col. E. P. Vollum, Surgeon, under his assignment as acting Asst. Medical Purveyor, to whom Capt. Johnson will then transfer the public funds. Par. 1, S. O. 257, A. G. O., Washington, D. C., November 3, 1888.

Major Henry McElderry, Surgeon U. S. Army, granted leave of absence for two months, by direction of the Secretary of War, to take effect on the completion of his present duties. Par. 3, S. O. 256, A. G. O., Washington, D. C., November 2, 1888.

Capt. Clarence Ewen, Asst. Surgeon, is relieved from duty at Ft. Sidney, Neb., to take effect on the expiration of his present leave of absence, and will report in person to the commanding officer, Madison Bks., N. Y., for duty at that post. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1888.

Capt. Daniel M. Appel, Asst. Surgeon, is relieved from duty at Ft. Davis, Texas, and will report in person to the commanding officer, Ft. Sill, Ind. Ter., for duty at that post, reporting by letter to the commanding General Dept. of the Missouri. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1888.

Capt. J. Van R. Hoff, Asst. Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 134, Dept. of the Missouri, Ft. Leavenworth, Kan., November 1, 1888.

Capt. Curtis E. Price, Asst. Surgeon, granted leave of absence for two months, with permission to apply for an extension of ten days. Par. 2, S. O. 257, A. G. O., Washington, November 3, 1888.

Capt. Marshall W. Wood, Asst. Surgeon, granted leave of absence for one month, with permission to apply for an extension of ten days. Par. 2, S. O. 257, A. G. O., Washington, November 3, 1888.

By direction of the Secretary of War, Capt. John J. Cochran, Asst. Surgeon, is relieved from temporary duty at Hdqrs. Div. of the Pacific, and will report in person to the commanding officer, Ft. Adams, R. I., for duty at that post. Par. 2, S. O. 256, A. G. O., Washington, November 2, 1888.

By direction of the Secretary of War, Capt. Norton Strong, Asst. Surgeon, is relieved from duty in the Dept. of Ariz., and will report in person to the commanding officer, Ft. Schuyler, N. Y., for duty at that post, and by letter to the commanding General Div. of the Atlantic. Par. 4, S. O. 255, A. G. O., Washington, November 1, 1888.

Capt. W. O. Owen, Jr., Asst. Surgeon, Ft. Leavenworth, Kan., will proceed at once to Ft. Sill, Ind. Ter., and report to the commanding officer for temporary duty at that post. Hdqrs. Dept. of the Missouri, S. O. 133, par. 1, Ft. Leavenworth, Kan., October 30, 1888.

By direction of the Secretary of War, First Lieut. James D. Glennan, Asst. Surgeon, recently appointed, will repair from this city to Willets Point, N. Y., and report in person to the commanding officer of that post for duty. Par. 3, S. O. 255, A. G. O., Washington, November 1, 1888.

By direction of the Secretary of War, First Lieut. Alfred E. Bradley, Asst. Surgeon (recently appointed), will report in person to the commanding officer, David's Island, N. Y., for duty at that depot, reporting by letter to the Superintendent of the recruiting service, New York City. Par. 14, S. O. 260, A. G. O., November 7, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 10, 1888.

Surgeon D. Dickinson, ordered to Naval Hospital, Mare Island, Cal.

Surgeon G. P. Bradley, detached from Naval Hospital, New York, and to "Iroquois."

Surgeon R. C. Persons, detached from Army and Navy Hospital, Hot Springs, Ark., and to Naval Hospital, New York.

P. A. Surgeon Ernest Norfleet, detached from Naval Hospital, Mare Island, Cal., and to the "Trenton."

Asst. Surgeon H. N. T. Harris, detached from Naval Hospital, Mare Island, Cal., and to the "Kearsarge."

Asst. Surgeon J. S. Sayre, ordered to examination for promotion.

P. A. Surgeon H. G. Beyer, detached from "Trenton" and granted six months' leave, with permission to leave the United States.

Patrick H. Bryant and Luther L. von Wedekind, commissioned Asst. Surgeons U. S. Navy.

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ORIGINAL ARTICLES.

THE TREATMENT OF PERITONITIS.

Read in the Section on Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888

BY WM. H. MYERS, M.D.,
OF FORT WAYNE, IND.

PATHOLOGICAL DEFINITION OF PERITONITIS.

"Increased vascularity-softening or thickening of the peritoneal membrane, with effusion of coagulable lymph, or of a sero-albuminous or sero-puriform, or sero-sanguineous fluid, sometimes with organized adhesions." Copland.

When Dr. Rushton Parker asserts in his article on Peritonitis, published in the "Dictionary of Practical Surgery," that "the treatment of peritonitis is simple enough whatever be its cause," and that "opium, alcohol and liquid diet is the treatment that may be uniformly adopted in all its forms," he fails to apprehend that it is only through a perfect diagnosis in each case that we can see in what direction surgical or therapeutical interference should be attempted; for connected with the treatment of peritonitis are several questions I will submit for your consideration:

Is acute peritonitis ever idiopathic?

Is it a symptom or a disease?

Is it always septic?

Again I may ask—

Does the treatment properly belong to the physician or surgeon?

In your answer you will be brought irresistibly back to diagnosis, since from it all treatment must flow. It is then of primary importance that in every case the ætiology be definitely settled at the earliest moment. When we have arrived at the conclusion that peritonitis is present or impending, and we have discovered the cause, the blow must be struck simultaneously with the advent of the enemy; no delay can safely be tolerated, the only hope of rescue being the sudden arrest of the disease. We must learn the beginnings. As remarked by Sir William Gull: "Often when the gathered clouds of the final storm have filled the atmosphere it is in vain that we look around to see from what point of the Heavens it began." By the time that the normal outlines of the abdomen are obscured by tympanitic distension, respiration quickened and shallow, the pulse rapid and wiry, the supreme moment for precise diagnosis is past.

What are the grounds for a true discrimination? Certainly not the teaching that acute peritonitis may be idiopathic in a healthy subject. Upon this subject Dr. Savage, of Birmingham, England, in 1885, expressed the following opinion: "We are learning, if we have not already learned, to look upon peritonitis as a symptom of some organic change and not as a disease in itself; and this is well for our patients, because operative measures can do much for it; we shall ere long regard so-called 'idiopathic peritonitis' almost as a curiosity." Professor Bartholow's opinion is, that the great majority of cases of peritonitis come from previous disease in the peritoneal or pelvic cavity. He believes it to be extremely rare, indeed, for an idiopathic case to occur. Habershorn refers to 3,752 inspections made in Guy's Hospital; 501 were instances of peritonitis, but could not find a single case that he considered idiopathic. "A pure idiopathic peritonitis is difficult to realize under any circumstances; in puerpera it is impossible." Barnes.

Believing as I do, that acute peritonitis is never idiopathic but must be septic I am compelled to believe that the treatment must be modified in accordance with these views.

THE EVOLUTION OF THE TREATMENT OF PERITONITIS AFTER LAPAROTOMY.

On January 1, 1859, Sir Spencer Wells made an abdominal section and removed an ovarian tumor; the patient died thirty-two hours after. One hour after the operation she had a pulse of 100, and complained of some pain; a suppository containing $\frac{1}{3}$ grain of morphine was passed into the rectum; two other suppositories at intervals of half an hour; a sixth suppository at midnight; pulse 130; 9 A.M., pulse 124; eighth suppository at noon. The autopsy revealed the presence of peritonitis. A considerable amount of free liquid was present in the cavity generally; the fluid had a pungent, irritating effect upon the skin. Sir Spencer in reviewing the case asks the pertinent questions:

What was the cause of death?

Did she get too much opium? Two grains of

morphine within ten hours and 1 grain in the succeeding twelve hours. He dismisses this consideration and asks "Did she die of peritonitis?" This question he answers thus: "My impression is, that if peritonitis killed her, it was indirectly by the formation of a morbid poison; the serum was very acrid." "If then my patient could generate a poison capable of killing other people may it not have killed her?" His practical commentary is in these words: "It may possibly be advisable, in some cases, to provide for a free outlet of the effused serum." (It was about this period when Baker Brown quailed before what he called peritonitis as a cause of death after ovariectomy.) These reflections were followed by the introduction of the drainage-tube and drainage of the peritoneal cavity.

Sir James Paget said in 1862, in an address delivered before the British Medical Association, that "some of the deaths after surgical operation were preventable; and that "the mortality will be reduced if the members of the Association will decide that it shall be."

In 1864, Sir Spencer Wells directed attention to the existence of germs in the atmosphere, and advised precautions against their entrance from without or their development within, in abdominal sections. In 1877 Lister arrived in London, and the questions of aseptic and antiseptic surgery, and their applicability to ovariectomy were considered; for in the inflammatory products within the peritoneal cavity, the effusion, germs were found; living organisms with an indefinite power of reproduction, and when once implanted in a suitable soil multiplying indefinitely. This is the doctrine of the day.

Germs are living. All living things require certain conditions for their growth and development; vitality their poison, non-vitality their food. We do not propose to enter into the question, whether microorganisms be the cause or result of the morbid processes with which they are associated, but to study the methods of interference: 1. By removing the germs; 2. By removing the soil in which they grow.

Microorganisms outside the body, can be destroyed by germicides; but when they have once gained entrance and are inside the pelvic cavity all we can do is to sustain the organism, in the struggle for existence between the cells which compose it and the bacteria which have invaded it. The clinical means most highly valued are opium by the physician; salines drainage and surgical procedures, when necessary, by the surgeon.

Grailly Hewitt, of London, in 1868, quotes Mr. Clay as saying:

"The chief mortality, 48 per cent., arises from peritonitis after ovariectomy." Baker Brown after a series of disasters utters the truism: "It's the peritonitis that beats us." Tait now informs us

that now we beat the peritonitis; on the slightest indication of its appearance, after ovariectomy, we give a rapidly acting purgative, it matters not what, the patient's bowels are moved, and the peritonitis disappears." "This practice," says Tait, "was introduced by me in 1875, and is now almost uniformly adopted." He continues: "How different from the views we had drilled into us years ago, that opium was the sheet anchor of the practitioner in all abdominal troubles, when I say that all opiates are forbidden in my practice."

This may be regarded as the latest phase in the evolution of the treatment of peritonitis after abdominal sections. This I regard as the greatest advance that has been made, and to Mr. Tait is solely due the credit of it. In reply to a letter of recent date he writes as follows:

7, The Crescent, Birmingham, April 16, 1888.

Dear Sir:—Thanks for your very kind letter. I am perfectly satisfied, and I think the majority of practitioners who have tried it also agree that the best treatment for peritonitis, especially when occurring after an operation, is an early administration of saline cathartics. It is a practice which I had not seen the slightest reason to depart from.

Yours very truly,

LAWSON TAIT.

In a letter from Dr. Joseph Price, of Philadelphia, occurs the following statement with reference to the treatment of acute peritonitis: "I hold very strong convictions in the strictly good effects produced by the free use of salines; they do most decidedly imperil the safety of the many germs, beside relieving the overloaded and inflamed tissues and congested conditions of all the abdominal and pelvic viscera. I have not the power of too strongly urging the use of salines upon the slightest indications of local or general peritonitis. I have never known them to disturb in any way the vital power other than to benefit."

Dr. Charles B. Penrose, of Philadelphia, sent the following reply to a letter requesting his experience in the treatment of acute peritonitis.

"My experience is limited altogether to peritonitis following laparotomy; in all cases of abdominal section, sulphate of magnesia or Rochelle salts is administered in a large dose the moment any tendency to undue distension or general abdominal pain is noticed. I think that when patients survive the first shock of peritonitis, they die subsequently from the same causes which produce death in intestinal obstruction from other causes. At the onset of the peritonitis it may be absorbed by salines; after it is well under way, however, I think that the salines save life by overcoming the intestinal obstruction. I think that statistics show beyond a doubt the superiority of the saline treatment over the opium treatment, at least after laparotomy." Speaking of the one hundred consecutive successful cases of laparotomy by Dr. Price and himself, he says he can-

not recall one case in which opium, even paragonic, was given.

Grieg Smith in his work upon "Abdominal Surgery," in the first edition, says: "After abdominal operations if peritonitis, local or general follow, opium is not the best treatment. As a rule, sedatives are to be condemned. I had oftener than once recourse to a saline purge in peritonitis; a purge carries off great quantities of gas and fluid, relieves the distension, and probably by its physiological action relieves engorgement of intestinal vessels."

Grieg Smith in the second edition of his work says: "Over and over again, I have been able to demonstrate to students and medical men, the value of a saline purge in case of incipient peritonitis. In grave abdominal cases I positively like to see diarrhoea natural or artificial. Slowly, but surely, the therapeutic virtues of purges in operation are being recognized. Among the most enthusiastic supporters of the plan are such well-known surgeons as Gill Wylie, Baldy, Penrose, and Gardner." Here he quotes the last named as saying: "In my work during the year I have given no opium, and invariably, immediately after the appearance of distension, pain, vomiting, I have given purgatives with the most signal advantage.

We are not so completely impressed with the authoritative decisions of tradition as to believe the rational treatment of acute peritonitis to be—to benumb the sensibilities, reduce the respirations, and contract the pupils with opium in heroic doses; rather should we prevent the presence of germs and expel them from the pelvic cavity by drainage.

Narcotics.—For opium, its advocates claim that pain is annulled, the nervous system tranquilized, sleep induced, the shock lessened and the peristaltic movements of the bowels arrested.

Salines.—For these, their advocates claim that by their use, we "imperil the germs," deplete congested peritoneal vessels, and drain off through the intestines serum contained in the peritoneal cavity.

While we admit that opium relieves pain, we also claim that it prevents the escape of poisonous products. We also deny that it is necessary to give opium to arrest peristalsis, for the reason that in an acute attack of peritonitis complete paralysis of the muscular walls of the intestines exists, destroying its function and producing often obstruction.

In support of this view, Godlee (as to the diagnosis in peritonitis) says: "It seems worth emphasizing that peritonitis *per se* ought always to be considered as one of the possible causes of intestinal obstruction, and that the complete absence of visible peristalsis is an important indication of its presence."

Charles Penrose, in an article published in the

Medical and Surgical Reporter, Philadelphia, says: "The danger of moving the bowels after exposure of the peritoneum has been much exaggerated. It seems probable that the peritoneum is subjected to at least as much irritation from the tension and movement caused by the distending gas as it would be from any peristaltic motion of the muscles of the intestines."

We are advised to keep the bowels in splints; this is in direct conflict with the law that micro-organisms require the condition of rest for their development; they will not multiply in the circulating blood. I had one painful experience where I kept the bowels in splints, after an ovariectomy; during the first week nothing untoward happened, but on the seventh day peritonitis supervened, until on the fourteenth day, when she died with symptoms of strangulation and the autopsy revealed that it depended upon adhesive bands, uniting coils of intestines. Had I prescribed a saturated solution of sulphate of magnesia and kept up a peristaltic action, the formation of false bands and adhesions could not have occurred. In confirmation I will refer to the *Berliner Klinische Wochenschrift*, January and February, 1874.

On the 28th of June, 1887, I made an abdominal section and removed both ovaries; they were cystic; on the second day following a chill and rapid development of peritonitis. I immediately gave half an ounce of saturated solution of sodæ et potass. This was followed by profuse watery discharges; the vomiting ceased; the tympanitis disappeared, the pulse and temperature declined in a few days becoming normal—complete recovery.

On the 13th of November, 1887, I was called to visit Mrs. C., æt. 36. I found a ventral hernia with strangulation; the tumor the size of the double fist; symptoms urgent. The taxis having failed laparotomy was decided upon, stricture divided reduction and excision of the sac; the peritoneal cavity closed by stitches, the final dressing as after ovariectomy. On the third day she had a severe chill, pain followed by vomiting, tympanitic, distension of the abdomen. Pulse, 120, temperature 101°. Treatment, heroic doses of opium prescribed by the attending physician. I ordered the opium discontinued and gave a full dose of magnesia; copious purgation followed, after which the peritonitis rapidly subsided and the patient speedily recovered.

Traube reports a case of a patient affected with general peritonitis, and in whom after death no adhesions or bands between the folds of intestines existed, although there were distinct evidences of false membranes on the parietal peritoneum. He attributes this unusual occurrence to the fact that the patient before death, had suffered from diarrhoea; he believes that constant peristaltic movements, which take place owing to intestinal

irritation, prevent the formation of adhesions and break those which may be formed. He accordingly questions the advisability of keeping the intestines at rest; claims that it facilitates the formation of adhesions; he is not convinced that inflammation is increased by the peristaltic movements, and suggests that peritonitis be treated by aperients.

While Treves advocates the use of opium in peritonitis, he admits that the clinical outlines of the case may be consequently blurred and serious errors in the diagnosis result in consequence.

THE DANGERS OF PERITONITIS.

The trinity of peritonitis, tympanitis and vomiting are the Furies of abdominal surgery.

In 1868, Baker Brown reported 111 cases of ovariectomy and thirty-five deaths. Speaking of the danger to be apprehended, places prominently, acute peritonitis as of most frequent occurrence; he gave opium in heroic doses, and finally says: "My experience has not given me that confidence in opium which most physicians possess." Peaslee, in 1872, in discussing peritonitis after ovariectomy said: "Give opium in quantities sufficient to remove the pain, and especially by hypodermic injection of muriate of morphine $\frac{1}{4}$ to $\frac{1}{3}$ grains, every two hours or oftener.

In 1872, Sir J. Y. Simpson in a lecture on ovariectomy, said: "Perhaps the most frequent cause of death in connection with the operation is peritonitis. The treatment is opium."

Barnes in 1874, in his treatise upon this subject, recommends leeches, opium and mercury.

Thomas said: "Peritonitis, which proves the cause of death in about one-fourth of all who die from this operation, (ovariectomy) should be treated by full doses of opium.

In the International Encyclopedia of Surgery, 1886, we find the following: "After ovariectomy peritonitis is to be counteracted by increased doses of morphine hypodermically or by the rectum (Chas. Caurel Lee, New York).

In 1866, Dr. Gardner, of Canada, opened the peritoneal cavity thirty-eight times with three deaths, and he declares that, "experience has taught him that opium in most cases is more harmful than beneficial."

TREATMENT OF ACUTE PERITONITIS BY ABDOMINAL SECTION.

I believe that we ought to advocate and practice free incision drainages as practiced in the joints and in the inflammatory conditions of the pleura. The question of operative treatment in puerperal, as well as in other forms of peritonitis, has been strongly presented in a paper by Dr. Chalmers on Puerperal Septicæmia before the British Gynæcological Society.

Lawson Tait in a recent publication declares, "I have now come deliberately to the conclusion that it is an act of almost criminal omission to

allow a case of peritonitis to die without abdominal section." Dr. Barnes has expressed similar views. Whenever pus has formed and collected in the abdomen and pelvis, he believed the indication was strong to make an incision so as to give it exit. This is in accordance with the rules of surgery in the brain, in the pleural cavity, and why not in the abdomen.

In a letter from Grieg Smith upon the surgical procedure, he writes as follows:

16 VICTORIA SQUARE, CLIFTON, April 6, 1888.
My Dear Sir:—In treating suppurative peritonitis by operations I am gradually coming to the belief that treatment with a wet and not a dry peritoneal cavity is advisable. The intestines are kept floating in a warm and mildly antiseptic fluid for one or two days, or even longer. I think it prevents the formation of adhesions, and consequent gaseous distension with its serious consequences.
J. GRIEG SMITH.

From the above quotations we are led to infer that opium is the routine remedy in acute peritonitis; is believed in as profoundly as if it were a religious dogma, and Professor Clark is referred to in the same spirit that actuated the Church of Rome in her appeal to the Greek Fathers to sustain her supremacy.

That the acceptance of an opinion in medicine does not afford evidence of its truth, is well illustrated by the fact that the sanguinary doctrines held by Professor Charles D. Meigs are now only found in his books, and not adopted as formerly by clinicians. It will be well to remember that the influence of authority in matters of opinion, does not prove that numerous persons have carefully examined the questions upon its own merits, and have founded their conclusions upon an independent investigation of the evidence. So the number of authorities adduced has, in fact, no weight, and thus their numbers alone are no more entitled to be considered as independent observers than the successive compilers who transcribe an historical error are entitled to be reckoned as independent witnesses.

DENTOGENY.

Read in the Section on Dental and Oral Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY WILLIAM C. BRITTAN, M.D.,
OF DETROIT, MICH.

The first indication of tooth development in the human embryo is noticeable at a period somewhere about the fortieth day of foetal life, and consists simply of an increased thickening of the epithelium over that part which is to form the future alveolar border.

At this time may be found, sometimes, not always, upon the lingual surface a slight depression or groove, the "dentinal groove" of writers, which when present consists of an infolding only of the mucous tissue, and is usually more marked

anteriorly than elsewhere. As, however, it is not always present, no histological importance can reasonably be attached to it. Later a change is seen to occur at certain points in the cells of the epithelium, consisting of an enlargement of the cells and their nuclei, these points corresponding nearly to the position of the future teeth. This changed epithelial structure dips down into the adjacent embryonic tissue in the form of "cords," or rather of tubular glands (Plate 1). The cells of the outer layer of these cords have a columnar form, yet they are seen to have now lost much of their resemblance to those of the columnar layer of the epithelium with which they are said to be identical. Plate 2 shows one of these cords highly magnified.

These epithelial cords constitute the embryonic enamel elements and later form what is known as the "enamel organ," which is concerned mainly—but not wholly—in the production of the enamel of the tooth. Coincidentally with the above changes an increased activity has been in progress in the submucous tissue adjacent to these cords resulting in a multiplication of its cells and a consequent increased density of this tissue at points which occur sometimes beneath the cords, sometimes at one side (Plate 1-D.) and often one upon each side, in which case the enamel elements for two separate teeth of the same type are furnished from one cord.

These cell clusters of the submucous tissue gradually assume a papilliform appearance, pushing up against the overlying cord, in which they soon become nearly enveloped, and now constitute the so-called "dentine germ, or organ." In these two germs—the enamel and the dentine—we have the prime factors of tooth-building. And the processes here employed furnish problems many of which are yet unsolved. The interpretations which we shall give are solely the result of our own study of these tissues. The micrographic illustrations are from some of the preparations used for that purpose, and the preparations themselves are from the human embryo. If we err in any of the statements here made it is quite consoling to know that all other writers upon this subject have done the same. We believe, however, that we are well fortified.

Rapid developmental changes now occur. The cord, by a separation of its walls, assumes a somewhat "stirrup-like" form, its base conforming to the contour of the "dentine organ" until by the upward growth of the same all that part which is to compose the crown of the tooth is covered by the enamel organ in the form of a cap (Plate 3) which now separates itself from the original cord by the breaking up of that structure.

In this connection we would suggest that the prevailing dogma that the enamel organ for the second set of teeth is supplied from the cords of the first is incorrect. As a matter of fact they are

derived directly from the mucous epithelial layer just as in the first instance.

All the above changes occur previous to deposit of either enamel or dentine, but we now have both these organs in a stage of development nearly sufficient to begin that work, and from this point the progress of development is much slower than previously.

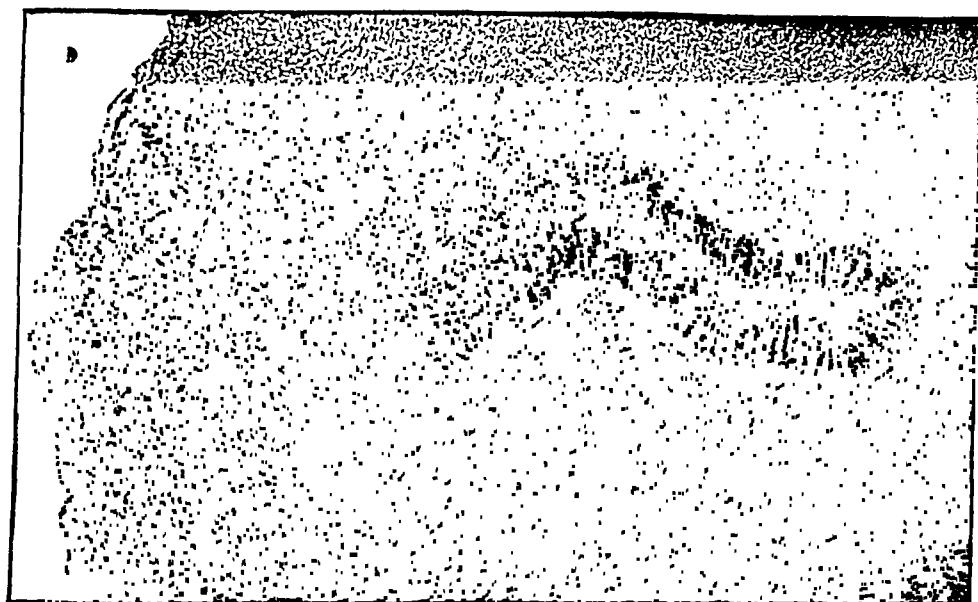
We will now, by referring to Plate 3, note some of the changes that have taken place in the "enamel organ" in its transition from the cord with its outer wall of columnar cells to its present condition. By the separation of its walls in the course of its development the cells of its interior have by growth and separation, and attachment to one another by their processes, now assumed the form of stellate cells, and now constitute that part of the organ known as the "stellate reticulum (B), the exact function of which is not understood. This structure occupies all that part lying between the inner and outer investments, viz.: the wall in contact with the dentine organ (D) and that in contact with the saculus proper (E) which latter is the product of the contiguous embryonic tissue. Further, that at the point where the enamel organ embraces the *cervical portion of the embryonic tooth (G) the wall of the organ is folded upon itself*, thus bringing both walls (D and E) into mutual contact. These walls, although originally one and the same, here diverge, and now form two distinct and well differentiated structures. We also note that the outer investment (E) has lost all appearance of a columnar cell layer which characterized the original cord, and is now composed of a system of vessels and capillaries distributed through a fibrous membrane whose cells (mostly fusiform) now lie parallel to its surface.

At the inner wall (D) a very great change has also taken place. Here the original columnar form of the cells is still preserved at this stage of development, although greatly reduced in size, and having also lost other marked features of structure. Plate 4 gives a very good illustration of this boundary highly magnified.

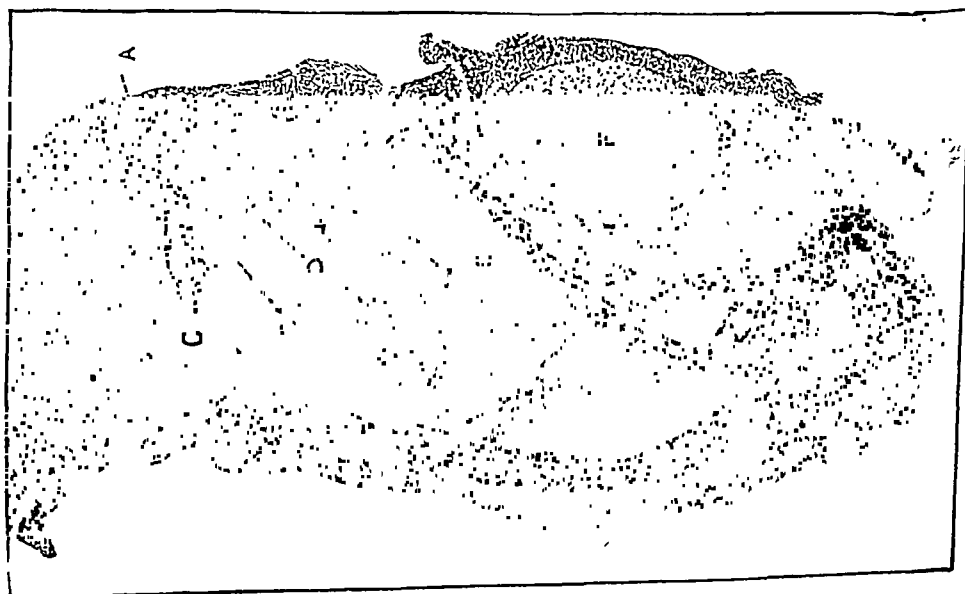
The changes above mentioned as occurring in these two investments might with some show of reason be accounted for as due somewhat to mechanical influences. For instance, the outer wall (E—Plate 3) in assuming its convex form in which we now find it would, so to speak, be put upon the stretch. In consequence its cells would be forced into a horizontal position. On the other hand there would be a crowding together of the cells in assuming a concave form in the inner wall (D) thus maintaining their columnar form. These walls (D and E) or boundaries are said to be identical with the so-called "malpighian" layer of the epithelium, the columnar cells of which (D) are here transformed into "ameloblasts," or enamel forming cells.



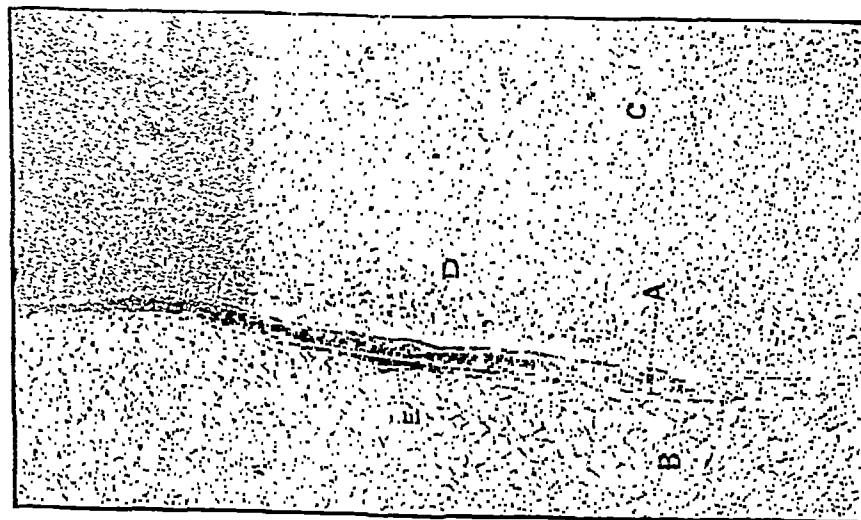
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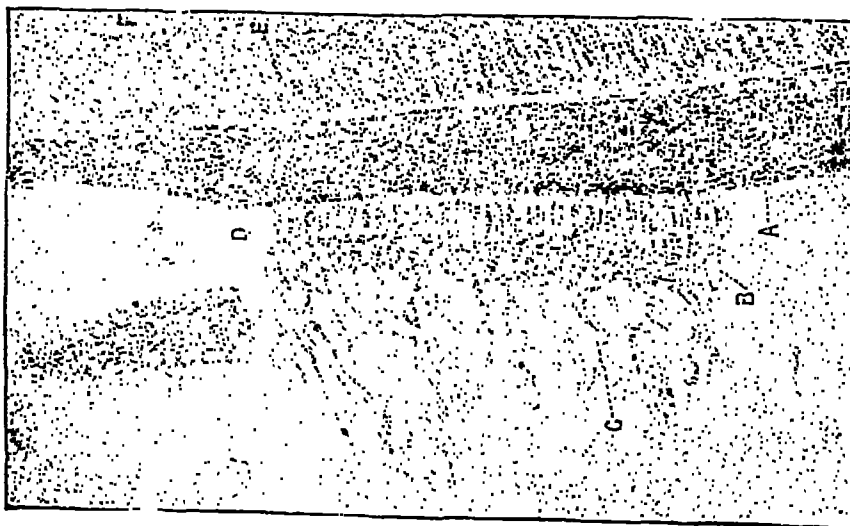
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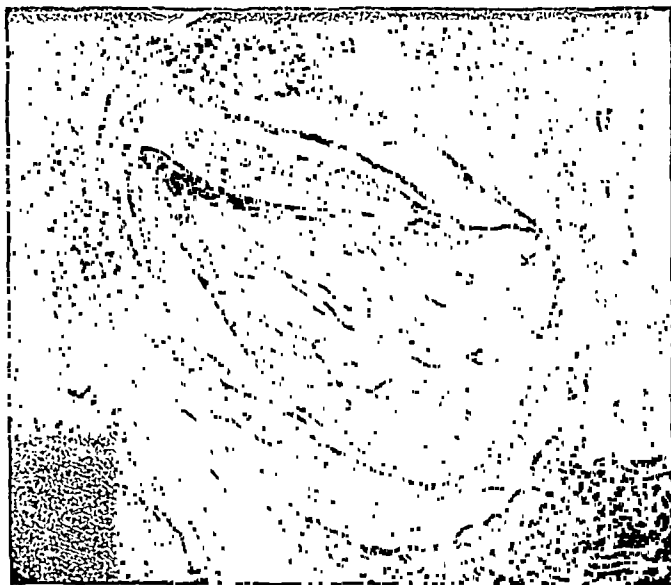
No. 1. X 75.



No. 4. X 300.



No. 5. X 1000.



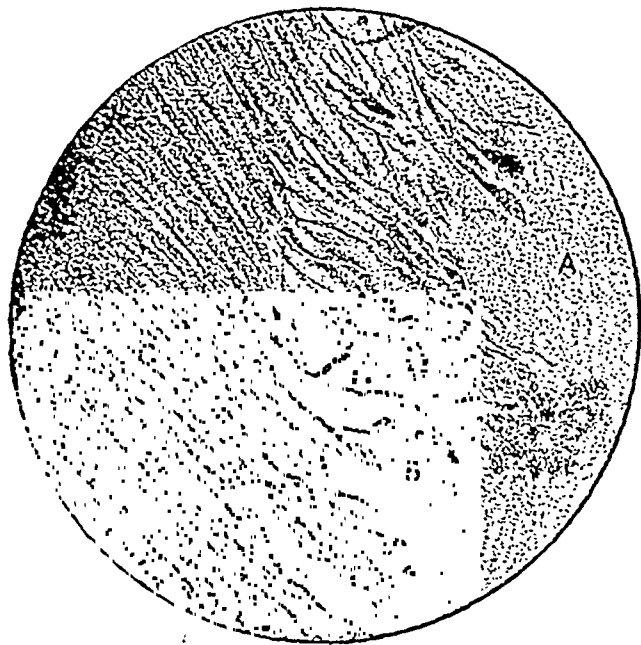
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To ascertain, if possible, how far this is a fact, let us examine a little into some of the structural characteristics of the tissues here involved. The saculus, as before intimated, is the product of the surrounding embryonic tissue, and exhibits two well differentiated structures, the outer layer being composed of fibrous connective tissue elements of a somewhat loose texture, while the inner, or that in contact with the outer investment of the reticulum, is in structure much finer and contains a profusion of nucleated bipolar cells with long and highly refractive processes, and lying mainly parallel to the surface of the organ in the outer wall of which they seem to be interwoven and to connect upon the other side directly with the processes of the stellate cells of the reticulum. Again the processes of the cells form a like connection with those of the "stratum intermedium," and these last are seen to form true axial connections with the columnar cells of the ameloblastic

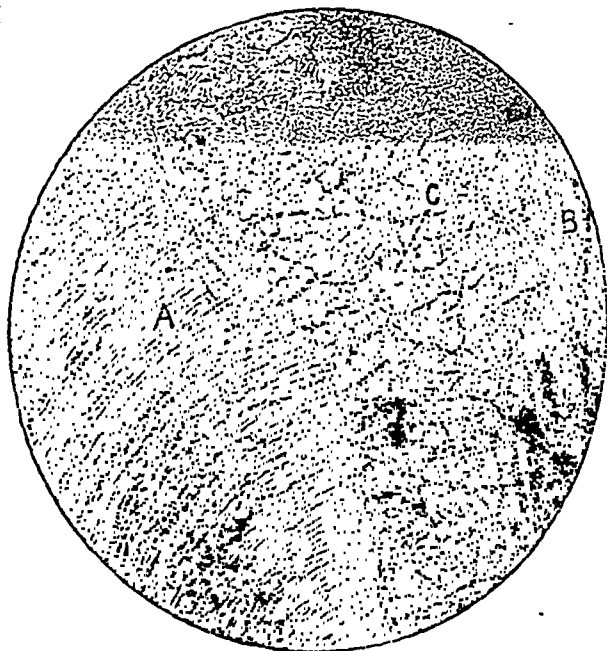
deated enlargements occur in them. Thus they become those columnar bodies known as "odontoblasts," to which we shall refer again further on.

We know that in these, as in the case of all the other tissues of the body, whatever elements are required for the work of building are derived from blood constituents. We know, also, that the enamel organ is *extra vascular*, the nearest approach of blood capillaries being at its outer investment. (Plate 3, E) on the one side, and the dentine organ on the other. Therefore it is clear that such supply must come from the point first mentioned. The blood constituents passing through the reticulum, probably there receive such elaboration as fit them for their final place of deposit. Herein, then, consists the function of this stellate structure.

An examination of the section represented in Plate 3 shows that a change is in progress at the nuclei of the stellate cells in the immediate vicin-



No. 7. X 1000.



No. 8. X 500.

layer, or, as we prefer to call it, the enamel matrix. (Plate 3, D). At the point of juncture of the cells of the stratum intermedium with those of the matrix they are joined by lateral processes. Sometimes two or more of these joinings are seen, thus forming those transverse lines which mark the upper boundary of the matrix cells, which are again joined at their lower ends where they come into contact with the dentine organ in just the same manner; and thus is formed the transverse line which marks the boundary here. And thus also is formed the supposed membrane lying between the enamel and the dentine, and which consists simply of a mesh or network composed of the lateral processes of the matrix-cells. These matrix-cells also send axial processes beyond this border line and into the dentine organ, where nu-

ity where a deposit of enamel is about to occur—noticeable as a *marked increase in size*. They now appear as highly refractive spherical bodies of an opalescent character. Coincidentally with or a little before the first deposit of enamel, two or more courses of these bodies make their appearance in the upper part of the matrix cells (Plate 5, D), where they have been termed the nourishing cells of the enamel organ. These spherical cells, or nuclei, are not, however, developed within the enamel matrix, but are identical with those of the reticulum (C), and probably constitute the calcific elements of the enamel. They, by some means, find way within the matrix cells where, superimposed one upon another, by some unknown law, coalescence occurs, thus forming the rods or prisms of the enamel, the matrix cell walls becoming the

cement substance between the same. In this we have a perfect explanation of the striated appearance of the enamel rods—an appearance that cannot be reasonably accounted for in any other way. It is a well known fact that by treating the enamel with alkalis, the rods may be divided into minute cubical sections just in the places where these striations occur. We submit, therefore, that each of these little sections represents an original spherical body or *nucleus* which was developed within a stellate cell of the reticulum.

Associated with the first deposit of the enamel, which occurs very nearly coincidentally with that of the dentine, another very marked change takes place, consisting of an increased density in that part of the reticulum lying in contact with the matrix cells (Plate 5, B). This occurs in consequence of the upward push of the growing tooth-germ, accompanied with the increasing enamel deposit, which now so encroaches upon the reticulum that it here becomes folded or gathered back upon itself, thus forming that line known as the stratum intermedium (Plate 5, E). In Plate 4 it will be noticed that this structure is not yet developed. In consequence of this folding back of this structure it may be presumed that the nuclei lying in the deeper parts of the organ are brought into more intimate association with the matrix cells, thus favoring their migration. Plate 5 gives quite a good illustration of this. Here a portion of the matrix (D), stratum intermedium (B), and the reticulum (C), have been torn out from the enamel organ and left attached to the already formed dentine (A). As a result also of the outward push of the growing tooth, the matrix associates with what remains of the reticulum, and its outer investment becomes an attenuated layer over the apex of the tooth, and gradually assumes that form over the whole crown as the process of deposit is completed. In this we have the *mythical* "membrane of Nasmyth."

At this stage the enamelization of the tooth is nearly completed; but the function of the organ, or rather what now remains of it, does not end here, as we shall see. In Plate 6 we have represented an embryonic deciduous canine tooth with its investments at about the above stage of development. In making this section the enamel organ and the layer of last formed enamel was torn from its position, making quite a space (C) upon the labial side. Upon the palatine side the enamel organ (B) is intact, but with a disarrangement of the last formed enamel (E); yet quite a thick layer still covers the dentine, distinguishable from the latter by its higher color (F). At the base of the rudiment is seen a dark knotted line (H) composed of vessels and capillaries to cross section. Here is the growing point of the tooth. It is at this point that the crown begins and at this point that the root is finished. Immediately below this point is the base of the sac-

culus, and in contact with that the forming jaw bone (I). We note that the line (H) is joined by the lower borders of the enamel organ (B), thus completing the circuit. At this point of juncture (K) the two walls of the organ are in mutual contact. A little higher up, at (J), is the cervical line of the tooth, where the enamel is to end. Yet we see that the organ extends quite a distance below this point; in fact, nearly surrounds the dentine germ. An examination of the section reveals the fact that the nuclei in the reticulum are not developed in that structure below the points (J). Therefore this fact, taken in connection with the general conformation of the parts, clearly indicates that at this point (J) the tooth crown is to be finished, and all below that is the developing root. And it is just as evident also that in its outward growth the tooth passes directly through the remains of what once was the enamel organ, and which now becomes the matrix for the cement substance of the root and the boundary line for the dentine of the same. Inasmuch as this deposit here begins much earlier than that of the cement, it is seen that such a boundary must in some way be provided.

Here probably ends the office of the enamel organ so far as developmental function is concerned. Its life's activities having been spent in erecting to past usefulness a monument composed of the most enduring tissue of the whole body.

The main distinguishing features between the dentine and the enamel are chemical and structural. The same chemical elements enter into the composition of both, but in different proportions. This fact alone would account for a variation in structure, yet aside from this there are other important reasons for this. As we have seen, a specific organ is employed in the production of each, each working in harmony with the other and both for the consummation of the final result. In view of this one would be led to suspect a similarity in their modes of working. In studying these structures the following differences of structure are most prominent:

1. That while one is interiorly absolutely non-vascular the other is decidedly vascular.
2. In one a matrix is provided as a receptacle for the deposit; in the other no such provision is made.
3. In one a reticulated structure is a prominent feature; in the other it is hardly noticeable.
4. In one the deposit occurs in a distinct and specific form; in the other it is semi-homogeneous.

Notwithstanding, however, these well-marked differences, which we believe have often heretofore led investigation wide of the truth, we are convinced that there is very little, if any, difference in the mode of working in each. The dentine organ, as before stated, is developed in, and probably from, the embryonic elements of the submucous tissue. Some time previous to its en-

velopment by the enamel organ a rapid development of blood-vessels occurs at its base. These shoot upward into its substance, rapidly becoming a dense and arborescent system. They run mainly parallel to its long axis, with numerous fine branchings as they approach its upper boundary, where they appear to end in loops. The substance of the organ appears as a granular mass—due to its somewhat dense cellular structure. Its cells are small, variously formed, and are joined by very delicate processes, thus forming another stellate structure analogous to that of the enamel organ and probably also with the same functional characteristics, although with a widely differing environment. Some time previous to the deposit of dentine there occurs what has been supposed to be a metamorphosis of the cells along the border line in contact with the enamel matrix, which now assumes the appearance of a columnar layer at these points. These bodies, the so-called "odontoblasts," as stated above, are only nucleated enlargements of the axial processes of the matrix cells of the enamel organ, which penetrate the dentine organ along this border and are again, by fine processes, joined to the deeper cells of that structure, thus forming a continuous system. The axial connections of these columnar bodies with the matrix cells form the "dental sheaths" or tubuli—their axis cylinders—the dental fibres. The branchings of the "tubuli" are a result of a fusion of two or more of these bodies. We are aware that all this is very unorthodox, *but so we see it*. In this connection we should ask a careful study of Plate 7. This section was made from a growing tooth. The space (A) was occupied by the dentine pulp. The "odontoblasts," so-called (B), are left attached by their long processes to the formed dentine. As represented here, their bodies often penetrate deeply into the dentine organ. As a rule, however, they lie nearly in contact with the line of deposit. The delicate processes at the free ends of these bodies by which they connect with the structural elements of the dentine pulp are torn away.

An examination of the dentine pulp at a time when the deposit is in progress reveals the fact of a profusion of granular bodies or nuclei quite similar to those of the enamel organ, which here as there, we may infer, constitute the calcific elements of the deposit. The reticulum of the dentine pulp is by no means as easy of demonstration as that of the enamel. Very careful manipulation and fresh unmounted specimens are the conditions of success in this direction. Plate 8 represents such a structure in the pulp of an adult tooth. Since, however, this occurs where there had been a secondary deposit, an abnormal growth is to be suspected.

Upon examining the pulp of a fresh specimen of growing teeth we find, adjacent to the inner extremities of the odontoblasts, a profusion of

the granular nuclei referred to above as constituting the elements of deposit. In just what manner this deposit is brought about is unknown; but the facts that it occurs in layers or laminae, and also that these granular constituents do not lose their identity in the new formation, are easy of demonstration. By treating the dentine with alkalis we may separate it into its component parts in just the same order in which they were put together. This we have demonstrated before.

The chemical difference existing between the enamel and the dentine seems more easy of a reasonable explanation. In the dentine organ exist just those conditions requisite to cause this difference. With its dense system of blood-vessels, enclosed in unyielding walls, are furnished the conditions for excessive blood pressure required for the passage of those elements (coloids), by transudation or otherwise, which makes this difference.

Since writing the above it has, through some subsequent observations, occurred to me—almost to the point of conviction—that in its inceptive development the dentine germ is indebted wholly to the enamel organ for the stimuli requisite for such a purpose. In other words, the enamel organ is the inceptor of the dentine germ.

We know that no tooth is developed without the predevelopment of such an organ. Even in that type of teeth which have no enamel the formation of an analogous enamel organ is the first inception. This is a fact which cannot be explained by the natural or other selection, or by referring to primitive forms. Its existence, therefore, under such circumstances, would seem to imply that of a necessity it must bear some significant connection with the formation of the dentine germ.

DR. M. H. FLETCHER: The paper we have just heard and the accompanying illustrations evidently represent the expenditure of much labor and time in their preparation. It is only those who are initiated and experienced in such work, that can appreciate the hours of research, and thought and reasoning necessary in such an investigation. In the whole subject of embryology, and the various phenomena connected with it, one will not find more natural barriers and difficulties to overcome in any branch than in undertaking the study of the dental system of animals. It has claimed much attention from our most learned and talented scientists, and is still involved in great obscurity. The most excellent paper just presented, clearly indicates a love for the work which would accomplish great achievements in this direction under favorable circumstances and opportunities.

The illustrations shown in connection with the essay, represent various stages of development

from the dipping down of the mucous membrane, to the development of both enamel and dentine. As to the time of this first appearance and dipping down, the essayist does not differ from other investigators. But the "dental groove," which he speaks of as not always being present, should be called the "dental ridge." Sudduth says on this point: "Concomitant with the formation of the ridge, the proliferation of the cells of the infant layer causes a depression of the subepithelial layer lying immediately underneath. Were we to lift up this thickened epithelial layer, it would leave behind a groove in the underlying tissue. But let it be remembered, that in lifting up the ridge or rampart of epithelial cells, we have made the groove. It is never a groove *per se* but, when formed, is always an artificial product which can be made at will." The "dental groove of writers," as quoted, is therefore now obsolete.

The essayist also says that at this period, "a change is seen to occur at certain points in the cells of the epithelium consisting of an enlargement of the cells and their nuclei, these points corresponding nearly to the position of the future teeth." This enlargement of the cells and nuclei at this stage has not, to my knowledge, been noted by other writers. But some authors speak of a proliferation of the cells, their size remaining the same until the dipping down of the cord has occurred, at which time some investigators have claimed also that the cells of the malpighian layer assume a columnar form. However, the latest investigations seem to show the cells of these layers to be oval or cylindrical shaped until the cord comes into contact with the dentine papillæ, and, after this occurs, they take on the columnar form and evidently become the ameloblasts.

The stirrup shape of the enamel organ spoken of is only the form seen on making sections of the tissue. As a matter of fact, the organ is bell-shaped, forming a hood over the dentine papillæ. It is spoken of as a cap, however, in another part of the paper. At this stage the doctor shows a section in which he claims that, "at the point where the enamel organ embraces the cervical portion of the embryonic tooth, the wall of this organ is folded upon itself, thus bringing both walls into mutual contact." (See Fig. 3.) So far as I know no other author has observed this. Other investigators represent this portion as free from such conditions as described. But since this is not a matter closely concerned in any part of the development it is not of great significance.

The important point in the paper, and that which has the greatest claim for originality, is the theory of the origin of the odontoblasts. After speaking of the numerous lateral processes given off by the ameloblasts or "matrix cells," he says: "And thus is formed the supposed mem-

brane lying between the enamel and the dentine, and which consists simply of a mesh or network composed of the lateral processes of the matrix cells. These matrix cells also send axial processes beyond this border line, and into the dentine organ where nucleated enlargements occur in them. Thus they become those columnar bodies known as odontoblasts." This certainly gives to the odontoblasts an entirely new origin, for they have up to the present been considered as a modification of the cells of the subepithelial tissue in like manner as the ameloblasts are a modification of the malpighian layer. The layer of cells at the summit of the dentine papilla, which come into nearest contact with the enamel organ, are the ones thus converted into odontoblasts.

To claim that any lateral process of a cell becomes nucleated and forms a cell of another class is certainly a perversion of the laws of morphology to some extent; for it would seem that if there are any truths established in this branch of science it is that, when nucleated cells divide, the division of the nucleus—as a *rule at least*—precedes that of the whole cell. If the doctor could show that the matrix cells generate a second nucleus which passes through this basement membrane, then it would add greatly to the rationality of his theory. The development of the cell, however, is a gradual process from a general to a special state. We can conceive how the subepithelial layer, in the process of differentiation, might develop from the epithelium, or the reverse. But the processes of amelification and dentification are, according to the essayist's own definition, quite different, and, in consequence, would require different kinds of cells—at least, sufficient difference to need the step from epithelial to subepithelial structure before these cells could be converted into organs differing as widely as the enamel organ and the dentine organ. Then, too, in this particular case, there is a great chance of error, for these processes are extremely hard to trace. Legros and Magitot say in regard to the process of the stellate cells: "It is a remarkable fact, that no line of juncture can be discovered where these cells are connected with each other, the various reagents failing to disclose the least trace of it." And this certainly holds good with regard to any processes given out by the ameloblasts at this stage. Nevertheless, this new theory does credit to its author and possibly may be true. But the chances are against it.

The fact that the enamel organ is to be universally found in the earliest stages of tooth development, even in that type of teeth which have no enamel, is not proof of the truth of this theory. For it is certain that many cells act catalytically on their environments. It is therefore not improbable that this action is the influ-

ence given out from the enamel organ, and is necessary for the incipient development of the odontoblast layer.

Reverting to the subject of the enamel organ, we may say that the description is good of the manner in which enamel is probably formed by the "subsuperimposing one upon another of the spherical cells, or nuclei from the 'stratum intermedium,' within the walls of the matrix cells." And also that the lateral processes of the cells and the cell walls may form the boundaries to the enamel prisms. One illustration (No. 6 B) shows the enamel organ with its stellate reticulum to be present over the particular part of the tooth in which the enamel is being deposited. But Sudduth claims there is no deposit of enamel until the reticulum disappears. The illustrations, if properly understood, would disprove Sudduth's theory on this point. That the remainder of the enamel organ form Nasmyth's membrane seem to be pretty well established. But the essayist seems to look upon the existence of this membrane as a myth.

The doctor would make this enamel organ a most versatile affair. For according to his theory it first prepares and forms the enamel, then gives the necessary cells to the dentine organ. Without it he thinks dentine could not be produced. And before it ends its existence he has it enclosing the root of the tooth, and producing the cement which is much less like enamel than dentine. This latter function of the enamel organ is certainly a new one, and it will be difficult to maintain the premises upon which the doctor's conclusion in this connection is based. Since cementum assumes so nearly the form of bone, the two processes of formation must be very much the same, and consequently produced by similar organs. Cementum is claimed—and most properly—to be a subperiosteal product stimulated into growth by the same causes that effect the formation of subperiosteal bone. The difference between it and true bone is possibly due to the confined limits in which this tissue is necessarily deposited. Since the periodontal membrane, according to Sudduth, has the special superintendence of this deposit, and is simply a continuation of the periosteum. The modification compared to bone can be accounted for easily in the manner described. But what part the enamel organ can possibly have in the production of cementum, either primarily or secondarily, is not easy to see. Moreover, the tissues necessary for the production of enamel are not at all necessary for the production of bone or cementum.

As to the source from which the cords of the permanent teeth are derived authors differ. But the latest investigators almost universally believe that the cords for the twenty anterior permanent teeth are developed from the cords of the twenty corresponding temporary teeth, instead of from the epithelium as the essayist thinks, and the cord

of the first permanent molar from the epithelium, that of the second molar from the cord of the first, the second in time giving off a cord for the third and last tooth. There are specimens showing deviations from this rule, but they seem to be mere irregularities.

In closing my remarks I deem it just to say that since there is no standard in this matter, on account of the extreme difficulties surrounding such minute investigations, all that we can do is to compare the work of the essayist with that done by other late investigators. The training and labor necessary even to follow the steps of the established processes and phenomena in this work are not small. And when one has become so familiar with the microscope and the preparation of specimens that he has perfect mechanical familiarity with his work, then comes the original work which he must undertake. But just here we meet with our greatest difficulty, for we have reached the limit of our appliances and reagents. We can now only let the imagination go on and, reasoning from homologies and analogies, form theories and try to establish them. As improvements may hereafter be made in our means of investigation our theories must stand or fall as they are found to be based upon facts or fiction. And it must be remembered that these improvements are generally brought about by the discoveries and the demands of just such faithful workers as our essayist. To him therefore are due the most hearty thanks of all interested in this or in kindred work.

ARE "MEMBRANOUS CROUP" AND DIPHTHERIA IDENTICAL? YES.

Read in the Section on Diseases of Children at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY I. N. LOVE, M.D.,
OF ST. LOUIS, MO.

Since the first paper of Bretonneau, about 1821, at which time our real and definite knowledge of diphtheria had its beginning, down to the present time, the question which forms the subject of this paper has not been decided.

Earnest students and careful observers have answered affirmatively and negatively. I shall not fatigue my hearers by collating the expressions of writers who have accepted one view or the other. I shall present my own opinions based upon a deliberate weighing of all the evidence presented by trustworthy and thoughtful witnesses, and personal clinical observation extending over a period of eighteen years in hospital and private practice.

During the earlier years of my professional life I was uncertain in my position; after reading the views of Virchow, Cohen, West, Flint, and others as able, I was inclined to take a position in the

ranks of dualists. Severe scrutiny of the products of the pen of Bretonneau, Traube, Barthez, Sanné, and the tribe of unicists, left me inclined to favor their position, but special clinical opportunities and additional arguments of later watchful workers and able annalists like Jacobi and Struempel have enabled me to crystalize my convictions and prompted me to take a position positive and pronounced in favor of membranous croup and diphtheria being identical.

While it may be true, as Hilton Fagge has observed, that the more our knowledge of disease advances the more our distinctions and subdivisions multiply, yet the tendency toward unnecessary multiplications and distinctions without differences should be guarded against most carefully. Dermatologists have given us half a dozen different terms to be applied to the different forms or expressions of erysipelas when, as a matter of fact, we know that, pathologically speaking, they are all one and the same disease, dependent upon the same germ and only varying in degree, action, or manner of announcement.

So too with fevers, the same disposition was manifested, as was illustrated when for a time typhoid fever, plus malaria as a complication, permitted the new coined term, "typho-malarial fever," to take its place in our nomenclature.

Whether the membrane, as in the so-called true croup, be a fibrinous exudation, superficial and easily stripped from the surface, leaving a smooth mucous surface, only robbed of its epithelium, while that of diphtheria is more of a coagulation penetrating or poured into the mucous tissue—a necrosis, as it were, in which the discharge can be removed only with great difficulty—is not important, it being largely dependent upon the anatomical characteristics of the parts involved.

That the disease is due to a special germ or microörganism, is admitted, and the recognition of this pathological point in the treatment has made a much more favorable showing in the mortality reports.

The growth and development of seed depend much upon their individual virility, favorable soil and surroundings. The expression of every disease varies with the individual victim, and is largely affected by its environment, favorable or unfavorable. A. may have typhoid fever so mild as to lead his physician to fancy he has in hand a simple case of continued fever; an attack of scarlet fever so simple as to be almost frivolous to the unwary; an assault from the dreaded Asiatic scourge—cholera—so mild as to take the form of a gentle intestinal relaxation; an erysipelas suggesting an erythematous flush; a small-pox with pustules few and far between, and little systemic suffering, while B. in the same ward may fall a victim to typhoid, typical; scarlet fever, severe and superbly perfect; cholera, classical, and collapse prompt; erysipelas so excessive as to en-

danger life and occasion an amount of suffering indescribable, and a variola so virulent as to promptly kill, or leave its victim marked in visage repulsive. This being so, then why should not A. be as likely to have diphtheria in a manner so moderate and superficial as to be almost overlooked, and B. so pronounced as to be fatal before the local expression could be observed.

Diphtheria selects by preference the pharynx rather than the larynx. The tonsils are a favorite site for the infection, not alone because of their prominence, but also because, as has been demonstrated, there is frequently to be found an interruption or break in their protective epithelial covering, and also owing to the fact that they are frequently in a vulnerable condition owing to previous or present inflammatory conditions. Then again, pavement epithelium is much more susceptible to attack than the ciliary variety, the latter being a higher grade of organization, of a more complex character, and possessed of greater ability to oppose aggression. When diphtheria attacks the larynx and trachea, which it does, fortunately, very rarely relatively, owing to the ciliary covering being less easily penetrated by the bacillus (possibly the tubercular bacillus makes a primary attack upon this point so seldom for the same reason), the free distribution of mucous glands which flow freely creating an exosmosis rather than an endosmosis, antagonizing absorption and impeding the peril of the adjacent tissues and destructive necroses of the same. At the same time the secreted mucus aids in throwing off the exudations from the surface, and the same causes are an explanation of the failures of the lymphatics of these structures to take up the infectious matter—hence laryngeal and tracheal diphtheria are largely local and unaccompanied by constitutional symptoms and would be a really mild expression of the disease were it not that for mechanical reasons life is endangered.

For similar reasons the circumscribed patches of diphtheria membrane upon the tonsils frequently covering them in their entirety, or their opposing surfaces, are unaccompanied by much constitutional disturbance; glandular involvement, etc., are mild manifestations of the disorder, and by practitioners who intemperately assert that death is the only evidence deciding in favor of a diagnosis of diphtheria, are no doubt sometimes placed in line with non-infectious diseases.

The structure of the mucous membrane, its different elements, as the epithelium, basement membrane, underlying connective tissue mixed with elastic fibres, the blood-vessels, nerves, and gland ducts, all affect materially the pathological plan of action locally and the general involvement. The free flow of secretion from the membrane lining the larynx and trachea, and the nasal cavities favors the separation and ready expulsion of organized exudates, but the difference in the ad-

jacent tissues is manifest in the varying systemic poisoning; in laryngeal and tracheal diphtheria, Bowman's membrane forms a barrier to ready absorption, while nasal diphtheria is deadly dangerous, due to the large number and size of the lymphatic ducts of the Schneiderian membrane, as well as their perfect communication with the lymphatic glands of the neck, all aiding ready entrance into the circulation.

The urine being free from albumen in the majority of cases of croup, is cited as an argument by the dualists to sustain their position, but even granting the fact, it is explainable by reason of the constitutionally mild character of the attack, if the larynx be primarily involved, and the large mortality preventing a fair comparison and complete determination of presence or absence of albumen. The frequency or infrequency of subsequent paralysis presented to prove their position as dualists can be met by the same answer as the above. A very interesting discussion of this subject occurred in the Louisville Clinical Society, January, 1888, and is reported in the *American Practitioner and News*, of February 4. An exhaustive aggregation of arguments from the dualist standpoint are presented by Dr. John A. Ouchterlony. Dr. W. Cheatham, of Louisville, by request of Dr. Ouchterlony, looked up the authorities for the other side and admirably arrayed them in the service of his friend, and he acknowledges that the resulting article comes very near making him a unicist. If there be a difference it is far from clear to his mind.

The argument that the suddenness of the attack and absence of a period of incubation separates croup from diphtheria, is properly met by the statement that examinations of the pharynx and nasal spaces are frequently insufficient, and the mild prodroma which would of necessity occur in primary laryngeal or tracheal diphtheria would probably be overlooked. I suspect that if the majority of cases of croup could tell their own story they would relate the fact that a complete examination, with full illumination of all the available mucous territory had not been made, and that intelligent and persistent interrogation might have revealed a history of slight loss of appetite and discomfort in swallowing difficult morsels for several days before.

To illustrate this point, I recall three cases of croup, so-called, within my knowledge during the past six months. One case will illustrate the three. Sent for to see a child 4 years old, said by parents to have sore throat, and feared diphtheria; not being in office some hours elapsed and call was cancelled. A few days later mother informed me that she had treated the child with medicine ordered for a neighbor's child with diphtheria, and had countermanded the order for me to call fearing her house would be placarded, and her business—the supplying of the neighbors with

milk—ruined. Five days later I was summoned in the night, but being out another physician was called. Two days later I was called in consultation and found the child dying from pronounced laryngeal diphtheria. Intubation or tracheotomy was offered and rejected. The child died a few hours later and a certificate was given by the attendant giving croup as the cause of death.

The mortality records show an enormous increase of deaths from croup (?) during an epidemic of diphtheria.

One fact which is worthy of notice, and which is an additional argument in favor of the identity of the two diseases, is that the classical treatment for croup has for years been the free exhibition of the mild chloride (coupled with stimulation), with a view to its defibrinating effect. The secretory system has thus been stimulated, and the effect has been to favor the moistening and exfoliation of the exudation and antagonize the disposition to constitutional involvement.

Since the same plan of treatment has been applied to general diphtheria the tendency has been to the securing of a similar result, and the mortality reports present a more favorable showing. By the prompt recognition of the first appearance of diphtheria, and the immediate institution of imperative interference in the shape of free purging with mild chloride, local antiseptics rendering the infectious matter innocuous, and the continuance of constitutional measures which are germicides and stimulators of glandular action, first on the list being the bichloride, benzoate of soda, and large quantities of water, we can without doubt claim accomplishments that are tangible and positive.

I feel strong in the conviction that "croup" and diphtheria are one and the same disease, and that the teachings of pathological anatomy, as well as the clinical symptoms will justify no other conclusion.

3601 Lindell Boulevard.

A NEW METHOD OF TREATMENT OF DISEASES OF THE URETHRA, BLADDER, UTERUS AND RECTUM— DRY MEDICATION, DRY SYRINGE.

Read in the Section on Surgery and Anatomy at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY ELMER LEE, M.D.,
OF ST. LOUIS, MO.

It is only the fact of defect, or lack of perfection, that permits of progress. Absolute perfection is not attainable. Evolution in medicine as in every other thing promises only progress. But it is a moderate forecast that asserts the certainty that diseases will be mainly conquered, life made more comfortable, and a man's life extended be-

yond the fixed limit of three-score years and ten. The industry of men everywhere enduring and endeavoring to discover means and methods of curing diseases of the race is great as it is noble and good. The probability is that, ere long, some great discoveries will flash out that will expedite progress. I bring my contribution, much or little, valuable or worthless. Perhaps it may help some other one to go a step further.

The urethra of the male is a passageway chiefly concerned in carrying urine from the bladder, having a length of some 23 cm. (8 or 9 inches) between the meatus and the bladder. The size of the urethra is 6 mm. ($\frac{1}{4}$ inch) in diameter, slightly less at the outer end, slightly more at the inner end. Mucous membrane lines the channel throughout, which is continuous with the inner coating of the bladder for urine and the kidney. The diseases of the urethra are similar to the diseases of mucous membranes elsewhere in the body. Inflammation of the urethra may be produced by one of the following causes: 1. Repeated mechanical or chemical irritation; 2. Catching cold; 3. Toxic and miasmatic infection. There is an endless number of known and unknown septic poisons of which many, if not all, have a specific inflammatory action.

My paper is especially concerned at this time with a method of treatment of mucous membranes of canals and cavities accessible to surgical aid. The male urethra is the seat of frequent inflammatory disease, and infection is the common cause, and the diplococci or gonococci of gonorrhœa the

thetic, but the prime question is, how to use the drugs with effect and without harm to the unfortunate patient.

I think it is a matter as to how, more than as to what, to use. My method of treatment of diseases of the urethra is as follows:

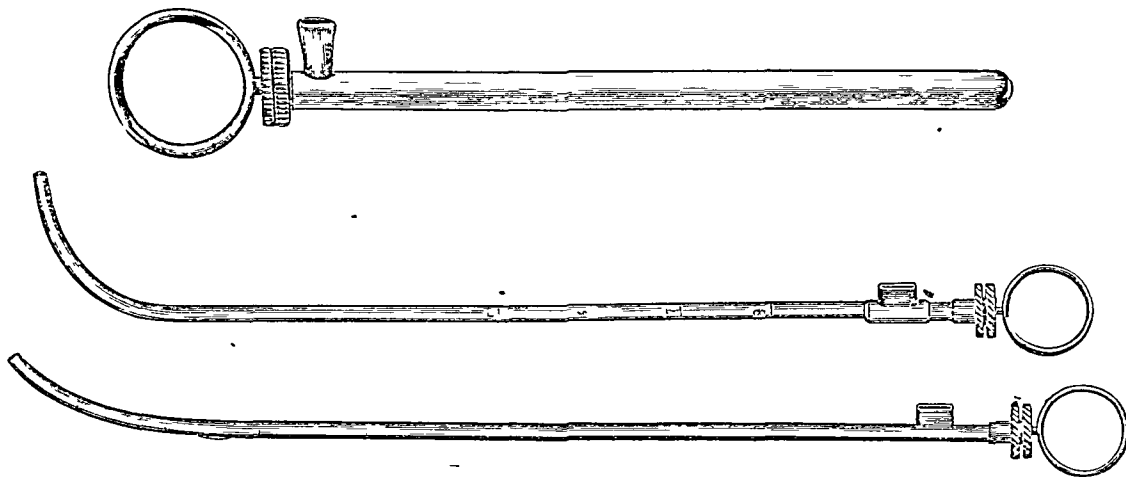
1. The employment of alkaloids, salts of alkaloids, glucosides and pure chemicals, in the dry state.

2. The active principles are in the form of granules or small masses mixed with pure cane sugar, and as soluble as the nature of the active agent will admit.

3. The placing of one or more granules at a dose, whether for purposes antiseptic, disinfectant, anæsthetic, astringent, and so on, in the precise region of the disease, and leaving the medication just where it is deposited. As it melts and dissolves and mixes with the secretions the tract or region of tissue will be bathed as the substance finds its way over their surface.

4. The use of instruments adapted for the purpose of carrying the granules in.

The matter of the selection of the medication is in the hands of the surgeon to use that which he may. The form of the remedy is convenient, the dose is accurate, and the method of introducing it into the channel of the urethra, the bladder, the cavity and neck of the uterus and the rectum is clean, economical, elegant, effective and simple. The warmed and oiled instrument is carried down into the urethra until the end defines the inflamed patch, and this it does with ac-



most common cause. The treatment of the urethra for gonorrhœa and other inflammations concerns a vast number of persons.

The methods of treatment are numerous. It is to day, in the light of science, not a question so much as to what remedy or drug is required to destroy the cocci and other bacteria, and which drug is a good disinfectant, and which an anæ-

curacy, when the granules are deposited in the urethra and the instrument withdrawn. The size of the granule is such that only the slightest, if any, irritation is caused. There is absolutely no distress as is the case with bougies of gelatine and masses of medicated gelatine and cocoa butter, and so on. The strength of the substance of the granule will determine as to how many to use for one

dose. A single granule of corrosive sublimate of 1 millig. ($\frac{1}{81}$ grain) is equivalent to a teaspoonful of a sublimate solution of 1:2000. Of granules of iodoform, iodol, hydro-naphthol, thallin sulphate and cocaine hydro-chlorate, as many may be deposited as may be needed in the judgment of the surgeon. The solubility of the granules *in situ* is considerably increased on account of the acid secretion of the mucous coat.

In the urethra the salts of alkaloids dissolve in three to six minutes, the alkaloids take a little longer, and the pure chemicals in three to six minutes. The medication is in a form so small and even when mixed and dissolved in the acid secretion, is inconsiderable in volume, a condition which favors thorough medication, in that the whole substance is retained on the mucous surfaces and not expelled as it would be if it were of a solution injected, or of such bulk as would cause distress to the urethra and expulsive contraction in the uterus.

A few days before I left home, my neighbor, Dr. Steele, used the uterine douche and a solution of boric acid in the case of a patient, the object of which was to disinfect the cavity of the uterus of some petrifying *debris*. Some particle of substance was forced into a venous sinus thereby, partial collapse ensuing quickly, which was with extreme effort overcome. Dr. Steele said to me, "Would the *granules* of boric acid not have been equally efficient? I think they would. And would there have been the same risk to life? I think not."

The granules are made of the active principles and pure chemicals and contain absolutely no irritating material. The size of the granule is not to be more than 3 mm. ($\frac{1}{8}$ inch) in diameter, for obvious reasons, and will contain of substance 1 centigram ($\frac{1}{6}$ grain), 1 milligram ($\frac{1}{81}$ grain), and of a few substances $\frac{1}{2}$ milligram ($\frac{1}{162}$ of a grain). The alkametric granules of Frederick Stearns & Co., of Detroit, made chiefly of Merck's pure crystalline salts, are suitable for my method. Also, the dosimetric granules of Chanteaud, in such high favor in France. The granules of the Metric Granule Co., of Chicago, are especially suitable by reason of the uniformity of size of the granule.

I have devised three instruments, which I will presently exhibit to you, as well as my method upon a patient. The short, straight instrument, consisting essentially of a plunger and barrel with its adaptation to a new application, is, through the kind suggestion of my friend, Dr. C. H. Hughes, christened a "dry syringe." It is applicable to the urethra and rectum. The second instrument is 25 cm. (10 inches) long, and consists of a tube and a flexible piston rod, with the proper curve to pass into the deep urethra and bladder. The third instrument is a modification of the dry syringe for the urethra, and is applicable to the

uterus and cervix. The dry syringe for the urethra is for the patient to use under instruction from the surgeon and may be prescribed or supplied to his patient by the physician. The dry syringe for the bladder and uterus are, of course, only safe in the hands of the skilful surgeon.

The time since receiving my dry syringe from the maker was too short to do more than demonstrate the mechanical features of this method. At the next meeting I will bring the results before you of a year of clinical experience with the dry syringe and granules of pure substances in the treatment of diseases of mucous membranes of the pelvic organs.

316 North Ewing Avenue.

THE CARBON COMPOUNDS.

THEIR TRUE PLACE IN THE TREATMENT OF FEVERS—OR THE PARTICULAR TYPES OF FEVER IN WHICH THEY ARE INDICATED—WITH SPECIAL REFERENCE TO THE EMPLOYMENT OF AMMONIUM SALICYLATE IN THE TREATMENT OF TYPHOID FEVER.

Read before the Virginia State Medical Society, at a Meeting held in Norfolk, Va., October 24, 1888.

BY S. K. JACKSON, M.D.,
OF NORFOLK, VA.

The older members of this Society may remember that about fifteen years ago (1873) I had the honor of presenting a paper entitled "Some Points in the Pathology of Typhoid Fever which Furnish Indications of Treatment," in which I suggested a plan of treating that disease differing greatly from those usually pursued. I think it due to the Society that it be kept informed of the history of a suggestion in which some interest may be felt, from its having been first made on this floor, and which has since attracted considerable attention.

My object now is, not only to fulfil this obligation, but also to comment upon a modification which has been proposed. And this will lead us to a discussion of the true place of the carbon compounds in the treatment of fevers, and to show that their selection is of much consequence, and becomes almost a matter of mathematical calculation, while their effects can be ascertained with almost mathematical certainty.

The favorable reception of the paper alluded to induced the editor of the *Virginia Medical Monthly* to solicit another for his journal, with fuller details of treatment and reports of cases in which it had been used. These papers evoked a large correspondence; probably necessitated by some unfortunate typographical errors. After correcting these as far as possible by letter, and after the lapse of some ten years, I felt that the results of maturer study and more extended experience should be laid before the profession; and this desire culminated in a paper on the "Ammonia Treatment of Typhoid Fever," read before the

Section of Practice of Medicine, at the meeting of the American Medical Association in Washington, in 1884. This paper was published in *THE JOURNAL* in August of that year—vol. iii, p. 183.

At the solicitation of the editor of the *Physician's Magazine*, this paper was supplemented by another giving reports of cases showing the effect of the sedative salts of ammonia in reducing temperature, and which was published in vol. i, p. 32, of that journal. Numerous letters, some of inquiry, some reporting experiences, some expressing grateful acknowledgments, poured in from all quarters. *THE JOURNAL*, in an editorial called attention to the original paper by a kind and favorable comment, and then again on October 10, 1885, gave an abstract and recommended a re-reading of it. My object in making these allusions is merely to show the amount of interest awakened in the subject.

These notices were followed by an exceedingly interesting paper by Dr. J. R. Barnett, of Wisconsin, relating some cases in which he had employed, with the most gratifying results, the treatment as proposed by me, and then giving an account of his experience with a modification of it suggested by himself, viz.: the substitution of ammonium salicylate for those salts of that base which had been proposed and used by me (*THE JOURNAL*, December 11, 1886). This drew from the pen of Dr. J. D. Sullivan, of Brooklyn, N. Y., a paper read before the Fifth District Branch of the New York State Medical Society in May, 1887, and of which a reprint was subsequently published in pamphlet form, giving a report of cases in which he had used Dr. Barnett's modification. This elicited from *THE JOURNAL* (August 6, 1887, p. 179) another complimentary notice of my paper, with the declaration that it would repay a re-reading.

Dr. Sullivan's paper was followed by a paper by Dr. D. M. Wick, of New Hartford, Iowa, published in *THE JOURNAL*, vol. x, p. 164, February, 1888, giving some interesting cases in which he had employed the ammonium salicylate.

The next paper on the subject which has come to my notice, is in course of preparation by Dr. E. S. Ellis, of Manistee, Mich.

The last two numbers of *THE JOURNAL* (September 29 and October 6) contain another elaborate paper by Dr. Barnett, entitled, "The Antipyretic and Abortive Treatment of Typhoid and Remittent Fevers," in which he condenses all that has been written on the use of ammonium salicylate in fevers.

While these several papers manifest an appreciation of the nitrogen compounds in the treatment of those fevers akin to typhoid, they fail to make distinction between this class of fevers and those of malarial origin, and thus ignore the fundamental principle upon which this treatment is based;

and the object of this paper is to show the necessity of this differentiation; for, while the carbon compounds are essential in the one class, they are of no account in the other—that, though they are required in malarial or bilious fever, typhoid fever and fevers of its class as imperatively demand the nitrogen compounds; and as the ammonium salicylate combines the two classes of remedies, it is more properly adapted to that form of fever which seems to be a compound of both classes.

As to the efficacy of this agent in the septicæmic fevers, it is not my purpose now to discuss.

As an analysis of the cases reported by the several gentlemen will confirm the positions for which we are contending, let us glance hurriedly at them.

The cases in which Dr. Barnett reports having tried the "ammonia treatment," and with marked success, were probably true typhoid fever, while the first in which he used the salicylate was, as he says, remittent fever. Several similar cases followed and, being *similar*, must have been of malarial origin. The next was a case of puerperal septicæmia; the next was of the same nature. Then followed some dozen cases, a majority following early abortions, in nearly all of which cellulitis was present. The next was gangrene of the lungs; next the septicæmic state of the last stage of tuberculosis—pneumonitis complicating other affections—next cerebral meningitis. Some twenty-five or more cases are alluded to, but not reported, of typhoid or allied fevers; but, as Dr. Barnett recognizes a close clinical relationship between these and remittent fever, we cannot know to which class they belong.

Dr. Sullivan's cases were mainly of erysipelas, septic cellulitis, puerperal septicæmia and the septic fever of tuberculosis. He had the opportunity of employing the salicylate in only one case of typhoid fever.

Dr. Barnett alludes to a paper by Dr. S. A. Fliesburg, of Hudson, read before the Inter-State Medical Association in July last, but as I am unable to procure it, have no means of knowing the class of cases reported.

Dr. Wick's cases are easily analyzed. He reports five, not one of which can be considered to be typhoid fever. The first he calls a remittent; the second remittent; the third measles; fourth atypical typhoid. The fifth was probably an intermittent.

Thus we obtain from these cases very little or no evidence of the value of the ammonium salicylate in uncomplicated typhoid fever.

While it has been a gratification to receive from practitioners in almost every State of the Union evidences of their interest in, as well as favorable reports of their trials of, the ammonia treatment of typhoid fever, as proposed by me and practiced with marked success for the past forty years, it has also been a matter of some surprise that so revolutionary a treatment, and one for which so

much is claimed, has not attracted the attention of our schools. Might it not be considered a duty they owe to the profession, either to approve suggestions worthy of trial, or to condemn such as are unsound in principle and likely to be harmful?

It may be that the learned professors of our colleges regarded, as Dr. Barnett was inclined to regard, the theories upon which this treatment was based as mere "vagaries;" but Dr. B. declares, as I had already shown, that they had borne "substantial fruit;" and it is reasonable to infer that a tree that could bear "substantial fruit" was not a myth, but a substantial tree. "A tree is known by its fruits." "Men do not gather grapes of thorns or figs of thistles."

Several of the journals have been furnishing us, lately, with details of the treatment of typhoid fever which is pursued by the most eminent and popular practitioners in the great medical centres of the country; but as these plans of treatment differ widely from that proposed by me, it is to be supposed that they are based on entirely different pathological views from those which suggested "the ammonia treatment." The correctness of these views can now only be inferred, until more accurate scientific investigation can be had, from a comparison of results. I have already reported my rate of mortality (which is less than 1 per cent.), and it would be interesting to compare it with that of the other modes of treatment. Dr. Barnett estimates the mortality by salicylate of ammonia treatment as 3 per cent. Of the others we have no reports.

As stated above, Dr. Barnett has proposed the employment of the ammonium salicylate as a modification of my treatment, and the object of this paper is to show to what class of fevers this valuable remedial agent is applicable, and why neither it nor any of its congeners are demanded, nor are particularly beneficial, in pure uncomplicated enteric fever.

In determining the treatment of a case of fever it is important to ascertain what particular form of fever we have to combat. We are not merely attempting to subdue the elevated temperature common to all fevers, but must aim our attack at the agency which has produced the pyrexia. If the former were our aim, the mere application of cold might effect our purpose; but if the latter, we must endeavor to ascertain the pathogenic cause, which, if as yet beyond our reach, can be studied as to its behavior, as to the conditions most favorable to its propagation, as to the agencies capable of destroying or crippling it, and as to the particular lesions caused by it. So far from recognizing any relationship, either "pathological or clinical," between malarial (that is remittent) fever and typhoid fever, I regard these two forms of fever as entirely and essentially distinct and possibly antagonistic—that they do not prevail in the same district at the same time; that they originate

from different causes and require different treatment. I think I am right in declaring these to be the views generally entertained by practitioners in malarious districts.

I have known some physicians to distinguish between them by testing the ability of quinine to control them or not, (a clumsy and unphilosophical mode of diagnosis) which, while distinguishing between the diseases, demonstrates at the same time their diverse character, as well as the fact that the most efficient means we possess for controlling malarial or remittent fever has no power in enteric fever.

While, in making diagnosis between these two classes of fever, I have not been puzzled by the "insensible shading" of which Dr. Barnett speaks, I admit the existence of a form of fever which really seems to partake of the characters of both. As every one who has read my previous papers on this subject will remember, that I was inclined to regard what is called "typho-malarial fever" as a disease *sui generis*, and due to a cause differing from that which produces true typhoid fever, and that I had considered these two forms of fever antagonistic, as stated above. But subsequent observation has inclined me to modify this opinion, having recently seen cases in which the malarial symptoms disappeared and left the typhoid symptoms uncomplicated, and *vice versa*. In a case just recovered the typhoid symptoms disappeared two weeks before convalescence was established. These hybrid cases, as I will show presently, are those in which Dr. Barnett's modification of my treatment is indicated. In these cases I have lately tried it with the most satisfactory results; but in pure uncomplicated enteric fever I have not seen, nor, for reasons which I have already given, did I expect to see, effects comparable to those of the other ammonium salts. These reasons are probably what Dr. Barnett considers "vagaries," but it is gratifying to know that the accurate researches of modern pharmacology are daily adding new facts confirmatory of them.

I do not know that any one contends, at this day, that the different forms of fever originate from the same cause—that the organism causing malarial fever was identical with that causing typhoid or yellow fever. This would be as preposterous as to suppose that small-pox and scarlet fever were caused by the same micro-organism.

In the account of his researches into the hæmatozoön accompanying, if not causing, malarial fever, Osler remarks: "It is very evident that we are dealing here with structures unlike any others which have been described in human blood, and with bodies which have no relation whatever to the spirillæ, micrococci, and bacteria of certain acute diseases." And Laveran declares that "these hæmatozoa have never been met with elsewhere than in the blood of patients suffering from malaria." These hæmatozoa are so distinct

from the typhoid bacillus in their morphology, in their habitats, in their life-history, in the food they require, in their excretions, in the lesions or effects produced in the human system, no one could suspect a relationship between them, or could suppose that the same toxic agents would be equally deleterious to both. Experience and observation have proved that they are not, and have demonstrated that quinine, the great antidote to the malarial poison, has no effect upon that of typhoid fever. This agent has been proved to be actually destructive of the micro-organism of malarial fever. Laveran declares that "he has never seen the peculiar hæmatozoön of malarial fever *after quinine has been taken*, and in order to find it, it must be looked for before any cinchona preparation has been administered." Has this ever been affirmed of the typhoid bacillus?

Whether the theory by which I attempted to explain the efficacy of certain means in these fevers be accepted or not, it is certain that the carbon compounds have more in conquering malarial, and that the nitrogen compounds are most efficacious in typhoid fever. To the former class belongs salicylic acid, and to the latter ammonium, and therefore the ammonium salicylate may be said to belong to both classes. Few practitioners would be willing to substitute salicylic acid for quinine in malarial fever, nor could I be persuaded to dispense with the doubly nitrogenous salt (nitrate of ammonia) for one with less nitrogen in typhoid fever.

The study of these carbon compounds is one of the most interesting engaging the attention of the profession; and by it some curious facts are being daily developed, which are strongly confirmatory of the theory I have advanced.

Brunton says of these carbon compounds "that their chemical nature depends on the arrangement of their constituent atoms, but their physical character depends on the number of atoms." He might also have said that their antipyretic, antiperiodic and antiseptic power increases with the number of carbon atoms which they contain. This rule, as far as their antiseptic power is concerned, is undoubtedly true, especially with regard to those organisms whose peculiar function it is to produce fermentative processes by which there is an exhalation of carbonic acid (CO_2). To see how far this assertion is justified let us glance at the series.

The lowest in the scale; that is, those with the smallest number of carbon atoms, are the alcohols, which are diffusible stimulants, evanescent in their effects. Methyl alcohol, the lowest (CH_3O), produces excitement quickly and runs through its stages rapidly. With ethyl alcohol ($\text{C}_2\text{H}_5\text{O}$) the stages succeed each other slower, but in regular order, and convulsive phenomena appear. Whereas in cœnanthyl alcohol ($\text{C}_7\text{H}_{13}\text{O}$) and caprylic alcohol "the stages are irregular and confused and convulsions sooner occur."

While I have spoken of the lower carbon compounds (the alcohols) as *stimulants*, I do not wish it thought that I ignore the modern idea that they are such by destroying the normal balance between the inhibitory and excitor nerves, by paralyzing the former without directly stimulating the latter. This paralyzing effect seems to be in direct proportion to the number of carbon atoms contained, and the law for which I am contending confirms the modern theory alluded to; for, as we ascend the scale still further, the paralyzing or inhibitory effect is still more pronounced.

The next higher alcohol is amylic alcohol ($\text{C}_{10}\text{H}_{21}\text{O}$), from which the powerful agent nitrite of amyl is prepared, which "produces *paralysis* of the nerves" (Brunton).

The ethers and aldehyde each contain but two atoms of carbon, hence their action is rapid and not persistent. But paraldehyde containing $\text{C}_6\text{H}_{12}\text{O}_3$, "is a pure narcotic causing sleep, like chloral."

Chloral and chloroform, the one having two and the other but one atom of carbon, seem to be exceptions to this rule, but this small proportion of carbon may account for the evanescent character of their anæsthetic and analgesic effect, and also for their want of antipyretic and antiseptic power.

As we ascend to the aromatic series of the carbon compounds this fact becomes still more prominent. We then reach carbolic acid (phenol alcohol, $\text{C}_6\text{H}_6\text{HO}$), creasote, resorcin, and hydroquinone, all of acknowledged antiseptic power.

The next step leads us to salicylic acid ($\text{HC}_7\text{H}_5\text{O}_2$), which though admitted to be germicidal, Brunton says of it, "It is much less useful in typhoid fever, and although it has some antiperiodic action, it is not such a powerful remedy in malarial affections as quinine."

The next in order is chinoline ($\text{C}_6\text{H}_7\text{N}$), containing two more atoms of carbon. It is said to be a powerful antiseptic and antipyretic (Brunton). "It has been used in typhoid fever, etc., apparently with benefit," probably because of the nitrogen it contains.

Naphthol ($\text{C}_{10}\text{H}_7\text{OH}$) contains one more atom of carbon than the last and is said to have a therapeutic action on the skin, like tar, which is used with efficacy in several parasitic skin diseases. When absorbed it causes loss of consciousness and convulsions.

Turpentine, a generally recognized antiseptic, contains the same proportion of carbon ($\text{C}_{10}\text{H}_{16}$).

The next higher in the series is one of the newly-proposed antipyretics, whose powers in this respect are unquestioned, viz., kairin, containing C_{11} , or one more atom of carbon. It is a salt of ethyl (C_2H_5)—chinoline ($\text{C}_6\text{H}_7\text{N}$)= $\text{C}_{11}\text{H}_{12}\text{N}$. We next reach the still more powerful antipyretic, "antipyrin," with its fourteen atoms of carbon and two of nitrogen. This climax is surmounted

by the most powerful destructive agent we possess to the malarial microbe, viz., quinine, which contains twenty atoms of carbon ($C_{20}H_{24}N_2O_3H_2O$).

A glance at this list will vindicate the assertion made at the outset, viz.: That the more atoms of carbon which an agent contains the more powerful is its germicidal and, therefore, its antipyretic effect. But this is only true, as we have shown, as far as the malarial poison and its congeners are concerned. For an agent capable of destroying the typhoid fever poison we must look to another class containing more or less nitrogen, which we have heretofore shown is the natural, or nature's antidote to that poison. The reasons for so considering it we will not repeat, but they are so cogent, and the success of the nitrogen compounds has been so decisive as to induce me to abandon all other means in the treatment of typhoid fever. No other reported plan of treatment compares with it in results, and it is not venturing too much to prophesy that it is destined to become the established treatment of this disease.

I hope I have succeeded in showing,

1. The necessity of a diagnosis between malarial and typhoid fevers, which is important on account of their different characters and their requiring different treatment.

2. That it is only the carbon compounds that are particularly efficacious in malarial fevers; as I have heretofore shown that the nitrogen compounds are demanded and are eminently efficacious in enteric fever.

3. That Dr. Barrett's suggestion of the use of salicylate of ammonium is particularly valuable in that hybrid form of fever to which Dr. Woodward gave the name of "typho-malarial," and not in pure typhoid fever.

4. That the carbon compounds generally are only indicated and could only be expected to be useful in those forms of fever which are due to a fermentative process caused by organisms exhaling carbonic acid gas, since they are chiefly destructive of this class of organisms and have little or no toxic effect upon those causing fevers which are accompanied by processes analogous to putrefaction in which ammonia or sulphuretted hydrogen are evolved, *e. g.*, typhus, typhoid, and the septicæmic fevers.

And finally, that these theoretical views exactly correspond with and are confirmed by clinical experience, as no agents have been found so efficacious in malarial fever as the carbon compounds; none more potent in typhoid fever than the ammonium salts; and probably none more valuable in septic fevers than the salts of sulphurous acid. And further, that this clinical experience justifies a reliance upon the use of these excretory products, viz.: carbonic acid, ammonia and sulphuretted hydrogen as agents for the destruction of the several organisms producing them, as being Nature's mode of inhibiting their life-processes, in

accordance with the law "that no organism can live in its own excreta," that is, in the product of its life-processes.

MEDICAL PROGRESS.

BINIODIDE OF MERCURY SPRAY IN TUBERCULOSIS.—DRS. MIQUEL and A. RUEFF have published a work on the treatment of pulmonary tuberculosis by sprays with the biniodide of mercury. The experiments of Dr. Miquel having shown him that the biniodide of mercury is microbicide in solutions of 1 in 4000, he was induced to try it against pulmonary phthisis, and this he has done in conjunction with Dr. Rueff. They have established spray apparatus at the Rothschild Hospital, and have submitted phthisical patients to the vapors of the biniodide of mercury, or rather the iodo-hydrargyrate of potassium. The following is the formula of the solution employed for the sprays: biniodide of mercury one part, iodide of potassium one part, distilled water one thousand parts, all by weight. But whether medicamentous liquids in the form of spray penetrate into the trachea, the bronchial tubes, and their ramifications is a question that has not yet been satisfactorily solved. Denied by some, this penetration is admitted by others, and appears to have been demonstrated by the experiments of Drs. Miquel and Rueff. It may, however, be observed, that of twenty-seven patients submitted to this treatment nineteen were improved, and eight remained stationary; the improvements were therefore at the rate of 70 per cent. In these cases attenuation of the pulmonary lesions was obtained, and particularly diminution of the expectoration and increase in the weight of the patients. In two cases even the disappearance of bacilli was established.—*Lancet*, Nov. 3, 1888.

TINCTURE OF PHOSPHORUS IN INFANTILE ASPHYXIA.—DR. FARICI has obtained excellent results in the treatment of asphyxia, occurring in the course of broncho-pneumonia in children. He advises the use of the following formula:

R. Cinnamon water 100 grams.
Ethereal tincture of phosphorus 8 drops.
Syrup of ether 20 grams. *℥*.

The dose is a teaspoonful every hour.—*Lyon Médical*, September, 1888.

ENEMA FOR CONSTIPATION WITH HÆMORRHOIDS.—

R. Glycerine 60 parts.
Soap 10 "
Fluid ext. rhubarb 40 "
Essence of chamomile 10 drops *℥*.

Use as an enema three times daily.—*Revue de Thérapeutique*, October, 1888.

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SATURDAY, NOVEMBER 24, 1888.

EDITORIAL CHANGE.

Having accomplished all that he had hoped or expected to accomplish when he accepted the editorship of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in 1883, and feeling the necessity for diminishing his responsibilities and constant work, the Editor of THE JOURNAL tendered his resignation to the Board of Trustees in the latter part of June last, the same to take effect on the 31st day of December, 1888. At a special meeting of the Board of Trustees held in Chicago, Nov. 9 and 10, 1888, the resignation was accepted, and JOHN B. HAMILTON, M.D., Supervising Surgeon-General of the Marine Hospital Service, and late Secretary-General of the Ninth International Medical Congress, was chosen unanimously to fill the place. He will enter upon the discharge of his editorial duties January 1, 1889. We trust he will have a long and prosperous editorial career.

AN IMPORTANT QUESTION.

"What will be the final effect upon the American Medical Association of the various associations of so-called *specialists*—the American Surgical Association, the Association of American Physicians, the Gynecological Association and all the others?

It will be a sad day for the profession of America when the time-honored A. M. A. ceases to be the medical institution of the country."—*New Orleans Med. and Surg. Journal*, November, 1888.

The question thus stated by our valued contemporary has been asked in a more private way by many of the more thoughtful members of the profession in all parts of the country. That many sincere friends of the American Medical Association, the true representative organization of the medical profession of this country, have looked upon the steadily increasing number of American associations of specialists with anxiety, lest they prove disintegrating and more or less antagonistic to any general and harmonious organization of the whole profession, is well known. And that some of those who have not only taken part in one or more of these specialist organizations, but have actively promoted the combination of all these in the so-called Congress of American Physicians and Surgeons, have been actuated by the desire that the latter should ultimately displace and supersede the American Medical Association, we have adequate evidence. There is now, and has ever been, in the ranks of the medical profession as in the ranks of all other educated classes, a limited number whose mental characteristics lead them to exclusiveness, or a decided disinclination to meet with the mass of the profession on a common platform. This comparatively small number, chiefly resident in the large cities, have never been satisfied with the liberal organization of the American Medical Association. They were represented in the Convention for organizing the National Association in 1846-7, and earnestly advocated a plan of organization that, while it would admit all regular practitioners of medicine to *nominal* membership, would restrict the whole business and management of the Association to a Council of limited number capable of self-perpetuation, instead of the representative plan based upon the State and local societies as reported by the committee and adopted by a very large majority. At a subsequent period, when the rapid development of specialties had commenced, it was this same underlying mental trait that prompted a few of those, in each, to meet by mutual agreement and organize *themselves* into an American Association under by-laws limiting the number to 50, 75 or 100 as the case might be, and making it impossible for any others to gain membership un-

less they were proposed and elected by nearly a unanimous vote of the existing members.

It is on substantially this narrow basis that the numerous American associations of specialists are organized, and every young specialist entering the profession, unless he has some influential friends among the members to propose him, and not a sufficient number of jealous rivals to *blackball* him, he must wait until he has actually achieved sufficient reputation to make his membership necessary to sustain the credit and influence of the association in order to gain admittance. In the meantime every important specialty is represented in the *Sections* of the American Medical Association, into which he can enter without the risk of being *blackballed* by rivals already in, and where he can mingle with all classes of the profession and have whatever communications or work of merit he presents spread before the profession generally through the columns of *THE JOURNAL*, instead of being hidden in an annual volume of transactions read by few except the members of the special organization before which they were read. The result will be that three-fourths of the young and ambitious specialists will continue to cultivate the acquaintance of the general practitioners by participating in the State societies and through them go to the American Medical Association and its Sections, and thus rapidly develop a National reputation in less time than they would have been kept in waiting to fill some vacancy in the membership of an exclusive specialist organization. Indeed, this result has already been demonstrated. During the last two or three years more work, and that of equally good quality, has been done in the several Sections of the American Medical Association than has been done in the National Associations of specialists.

And so obvious are the advantages of a wider publication of their papers, and their more direct personal contact with the general practitioners, upon whom the specialists must depend for much of their patronage, that very many of the ablest specialists who are active workers in the special societies, are equally active and influential in the Sections of the American Medical Association. Instead of the circle of American associations of specialists, accommodating in the aggregate less than 500 of the 50,000 or 60,000 members of the regular medical profession of the United States, having any serious tendency to supersede the

American Medical Association, it will only serve as a convenient and really useful place in which the small but respectable class of exclusionists can work and dine without personal contact with the sunburned and weatherbeaten general practitioners of the healing art.

THE HYPNOTIC ACTION OF SULFONAL.

Several articles have recently appeared on the action of this new drug, one of which, an inaugural dissertation by MATHES, is a very carefully prepared paper. He has administered sulfonal to tuberculous subjects, cardiac patients, patients with meningitis, acute alcoholism, anaemia, etc. In short, the drug seems to have been tried in all cases, without distinction, Mathes having previously found that it was harmless in certain quantities. His experiments showed that cardiac patients bore the drug as well as phthical patients. The results of his experiments were that sulfonal had a complete hypnotic action 72 times in 100 cases, incomplete hypnotic action 9 times, and no effect 18 times; in 19 cases accessory manifestations were produced. In most cases it acted better the second night than the first—a fact that makes it much superior to morphine and preparations of opium. The accessory manifestations mentioned consisted in ringing in the ears, slight cephalalgia, giddiness, general fatigue, and in a few cases vomiting. There were, however, no cardiac nor respiratory troubles, and no modification of the appetite or digestion.

The conclusions drawn by Mathes are as follows: 1. Sulfonal is a useful hypnotic agent, though it is not always efficacious. 2. It has the advantage over other agents of having no odor, no taste, and no influence on the essential organs of life. 3. It caused disagreeable effects in only a very small number of cases; and the worst of them was usually insignificant. 4. The dose is variable, and depends on individual susceptibility. Generally a gram is sufficient to cause sleep without accessory manifestations. When these are produced the dose should be diminished. On account of its slow action it should be given at least an hour before the time for sleep. 5. When the insomnia is due to an irritating cough or to pains not clearly neuralgic, the use of sulfonal is contra-indicated. In most true neuralgias, on the contrary, it may be used with benefit.

The hypnotic value of sulfonal has been investigated also by Dr. G. Algeri, in the Asylum for the Criminal Insane at Ambrogiana, his results being published in a recent number of *La Riforma Medica*. Algeri gives records of fifteen cases of mental disease, mania, melancholia, dementia, alcoholism, etc., in which the use of sulfonal gave a calm and regular sleep. The quantity used was from 1.5 to 4 grams. The sleep produced was not accompanied by any alteration of the circulation or of respiration, and was on the average of five hours' duration. No case of disturbance of the stomach was seen, even when the maximum dose was given.

Contrary to the opinion of Algeri, Mathes agrees with Salgo in regard to the slight sedative action of sulfonal in mania and delirium. Garnier, in a recent article (*Progrès Médical*, October 13), thinks there is much promise for the use of the drug in the therapy of the insane, an opinion shared by Rabbas. Expert opinion, therefore, seems to vary but little in regard to the future field of usefulness of sulfonal. Cramer, Fränkel, Kast, Ostreicher, Rosenbach, Rosini, Schmey and Schwalbe confirm the results obtained by Mathes, and speak from personal experience of the remarkable efficacy of sulfonal in producing a sleep absolutely comparable with normal sleep. After a dose of from 2 to 3 grams this sleep lasts 5 or 6 hours without the least modification of the pulse or respiration, as mentioned by Algeri. All unite in declaring it superior to chloral, paraldehyde, and all other drugs.

DIAGNOSTIC BACTERIOLOGY.

WEICHELBAUM has recently shown, in two cases at the Rudolphus Hospital in Vienna, the great diagnostic importance of bacteriology. The first case was that of a workman who had suffered from articular rheumatism for fifteen days. The tibio-tarsal articulation was swollen, and the temperature of the patient was 40.3° C. After the administration of salicylate of soda the temperature fell, and the pains diminished, but soon took on their former intensity. After five days the left knee-joint became affected, and in a few days a small pustule appeared. The spleen was enlarged, and the inguinal glands engorged. Weichselbaum examined some blood taken from the finger, and found the bacilli of glanders. A few

days after this it was learned that three horses of the employer of the patient were dead of glanders. The patient died twenty-two days after entering the hospital. Weichselbaum found glanders-granulations in the skin, subcutaneous and intramuscular tissue, and in the lungs. It was discovered that the patient had not come in contact with the diseased horses, but he had used the blanket of one of them. It is probable, therefore, that infection took place through the respiratory passages.

The second case was somewhat different. A coachman came to the hospital with several ulcerated nodules on his face, neck, and extremities, muco-purulent discharge from the nose, dyspnoea, tumefied spleen, etc. These symptoms taken in connection with the man's occupation, lead to a suspicion of glanders. But when a bacteriological examination was made of the pus of the nodules, no bacilli were found; enormous quantities of the streptococcus pyogenes and streptococcus pyogenes aureus were found, however. The patient died in four days, and at the autopsy Weichselbaum found, besides the furuncles, œdema of the glottis and lungs, and a parenchymatous nephritis in the atrophic stage. The principal disease, therefore, was nephritis, and the furuncles and the nasal affection were secondary infections.

Weichselbaum has also seen two cases in which the anatomical diagnosis at the autopsy, could be made with certainty only by the aid of bacteriology. These were supposed cases of charbon. The patients were brought to the hospital in an unconscious condition, with paresis of the extremities, dilatation of the pupils, etc., and died in about two hours. At the autopsies Weichselbaum found hæmorrhages into the meninges, brain, and mediastinum, a serous exudation into the pleural and abdominal cavities, tumefaction of the spleen, etc. Charbon was suspected, but examination of the blood did not confirm this diagnosis.

EDITORIAL NOTES.

THE ITALIAN SOCIETIES OF HYGIENE will hold their next Congress at Padua in 1890.

A NEW SANITARY CODE has been adopted by the Italian Senate, and will be soon discussed by the Chamber of Deputies.

SMALL-POX is raging to such an extent in many

departments of Italy that the Government has decided to reorganize its vaccination service.

THE RELATIONS BETWEEN ALCOHOL AND RENAL DISEASES is the subject of a debate to be held before the Pathological Society of London on December 4th and 18th.

THE "GAZETTE MÉDICALE DE LIÈGE" is a new French weekly, of 12 pages, the first four numbers of which have been received. It is edited by Dr. Brasseur; assisted by Drs. Merveille and Roskam, and the physicians and surgeons of the hospitals of Liège.

UTERINE TYMPANITES, according to Braun, of Cracow, may be cured by injections of creolin, in a 2 per cent. solution. Braun relates two cases, in one of which labor lasted five days; the foetus was in a state of putrefaction, and the mother's temperature 40°C ., and her pulse 130. In spite of her serious condition the woman recovered.

COCAINE AND OLEAGINOUS SUBSTANCES, when combined, cause a great deal of pain, says the *North Carolina Medical Journal*. In view of the inclination to use vaseline or some such substance with cocaine, especially in operations on the urethra, this is an important point, which possibly has been noted by other observers than Dr. Wood.

THE ALKALOIDS OF COD-LIVER OIL have been investigated by Mourgues and A. Gautier. They describe two fixed bases which accompany the volatile alkaloids: aselline ($\text{C}_{27}\text{H}_{27}\text{N}_4$) from the liver of the *Asellus major*, and morrhaine ($\text{C}_{19}\text{H}_{27}\text{N}_3$) from the liver of *Gadus morrhua*. In the liver of the *Gadus* there are other interesting compounds.

THE NEW MEDICAL STUDENTS IN LONDON this session number 693, including 25 in the London School of Medicine for Women. The English Provincial Medical Schools, as far as heard from, have 201 students. And yet our British brethren complain of overcrowding of the profession, and that too many are rushing into the study of medicine.

DISINFECTION BY STEAM.—Budde has made some experiments to determine whether the tension and movement of steam have a real influence in disinfection, as Koch states. He finds that Koch is correct; that the destruction of the bacilli of charbon may be considered as certain proof of the

efficacy of a method of disinfection. Consequently, anything may be said to be completely disinfected if its deep and less accessible parts have been exposed for at least five minutes to steam at 100°C .

PETERSEN'S BALLOON FOR SUPRAPUBIC LITHOTOMY caused rupture of the anterior wall of the rectum in a case reported by M. Nicaise. An analogous case is reported by Hache. Nicaise's patient was 65 years old, and had already had seven or eight lithotrities performed. The balloon contained 340 grams of water, and the bladder 270 grams.

CHICAGO POST-GRADUATE SCHOOL AND HOSPITAL.—This recently incorporated institution will, it is thought, be opened at an early day. The following are the incorporators and faculty: Drs. N. S. Davis, Sr., J. Adams Allen, H. A. Johnson, A. Reeves Jackson, J. H. Hollister, W. H. Byford, C. T. Parkes, H. T. Byford, Frank Billings, L. L. McArthur, H. P. Newman, W. F. Coleman, F. S. Johnson, Boerne Bettmann, Josef Zeisler, R. W. Bishop, Frank Cary, J. C. Hoag, Bayard Holmes, G. W. Webster, and Franklin H. Martin.

THE REPORT OF THE VIRGINIA BOARD OF MEDICAL EXAMINERS.—On another page in this week's issue of THE JOURNAL may be found a tabulated statement of the work done by the Medical Examining Board of Virginia from January 1, 1885, to October 9, 1888. It is to be regretted that we have no figures bearing on a larger number of students examined, and on graduates from a larger number of colleges. The figures given, however, are not without value, and we would call the attention to them of all who have any influence in sending students to the medical colleges of this country, and of all directly interested in medical legislation. Physicians of States that have no practice acts should show that table to the members of the Legislatures, and try to induce them to pass an act similar to the North Carolina or Virginia Acts, thus giving the people that greatest safeguard against incompetent practitioners—an efficient Board of Medical Examiners.

DEATH OF DR. HENRY B. SANDS.—Dr. Sands, the well-known surgeon of New York City, died suddenly in his carriage on Sunday afternoon, while returning from a visit to a patient. Dr. Sands was in his 59th year. He was graduated

from the College of Physicians in 1854, and immediately entered Bellevue Hospital as an interne. In 1857 he became demonstrator of anatomy in the College of Physicians and Surgeons, after serving in which capacity he was elected Professor of Anatomy. About ten years ago he was elected Professor of Surgery, his colleague being Dr. Markoe. At one time or another Dr. Sands has been connected with the surgical department of almost every hospital in New York. As a surgical anatomist Dr. Sands had but few equals, and as a surgeon he was successful and brilliant. He was a very rapid lecturer, which detracted somewhat from his value as a teacher. His writing was not very extensive, but all that he wrote was valuable. To see him operate was an unspoken clinical lecture. His death is a very great loss to the profession in this country.

SOCIETY PROCEEDINGS.

Medical Society of Virginia.

Nineteenth Annual Session, held at Norfolk, Virginia, Oct. 23, 24, and 25, 1888.

(Concluded from page 713.)

WEDNESDAY—EVENING SESSION.

Returning to the minutes in the regular order, as soon as the meeting had been called to order Wednesday night, October 24, prolonged calls were made by the audience upon Dr. HUNTER MCGUIRE, of Richmond. Finally consenting to respond, he made an extempore talk on the

FORMATION OF AN ARTIFICIAL URETHRA FOR PROSTATIC OBSTRUCTION.

(See page 695).

Dr. HUGH T. NELSON, of Charlottesville, presented his report as Secretary of the

MEDICAL EXAMINING BOARD OF VIRGINIA FROM THE ORGANIZATION OF THE BOARD, NOVEMBER 15, 1884, TO THE PRESENT DATE.

The Medical Examining Board of Virginia is composed of 32 members of the regular profession; 3 from each of the ten Congressional Districts of Virginia, and 2 from the State at large. These 32 members are nominated to the Governor for commissions, by the Medical Society of Virginia, to serve a term of four years. In addition, the Old Dominion Hahnemann Society nominates 5 homœopathic physicians, who are assigned to committees—thus in reality making the Board composed of 37 members.

Every applicant for license to practice medicine, etc., in Virginia since January 1, 1885, who had

not previously secured a license, has been required first of all to receive the permit of this Board before a license could be granted him by any Commissioner of Revenue, Clerk of Court, etc.

The plan for examination of applicants for permits as originally adopted (Nov. 15, 1884) is still in operation, and for thoroughness and fairness has recommended itself to the profession of this State, and to like organizations in other States. Applicants are examined on the eight grand divisions of scientific medicine, namely, chemistry, anatomy, hygiene and medical jurisprudence, physiology, materia medica and therapeutics, obstetrics and gynecology, practice of medicine, and surgery. The Board is subdivided into eight committees of four members each—each committee having charge of examinations on one of the above-mentioned subjects. In addition, the five homœopathic members who were added to the Board by Act of Legislature, in 1886, were assigned one to each of the following five committees: hygiene and medical jurisprudence, materia medica and therapeutics, obstetrics, practice and surgery.

To each committee is assigned the work of conducting the examinations on a separate subject. Each committee selects and reports the questions in its Section to the Board in session before they are made known to the applicants for examination; and each question thus reported by the respective chairmen of Sections is investigated by the Board, and approved or disapproved—those questions disapproved being remanded to the proper committee for revision or substitution. The standard of requirements adopted by the Board is for the applicants to answer in writing, properly, 75 per cent. of the questions. If an applicant fails to attain of $33\frac{1}{3}$ per cent. on any one of the eight Sections, he is refused license, even though he aggregates 75 per cent. as the whole percentage on the eight branches. This was demonstrated to be a necessity from the fact that some applicants entirely ignored the questions in one Section, trusting to make up the deficiency on other Sections.

Two rejected applicants entered on professional work in their respective counties without the permission of the Board, and in open defiance of the law. Both were indicted and punished by the courts. One of the cases was carried to the Court of Appeals of Virginia, which sustained the Board in every point in which its constitutionality was attacked.

A so-called Resident Physician at one of the Virginia Springs, who was a non-resident of Virginia and who had never stood the examination before the Virginia Board, nor had a license to practice in this State prior to January 1, 1885, was duly notified as to the place and time of the last meeting of the Board in Roanoke, July 17, 1888, but did not put in his appearance. After

this Roanoke session, the Secretary received a letter from this *non-resident* Springs Physician, stating that neither he nor the Manager of the Springs deemed it necessary or convenient for him to go to the trouble of going over to Roanoke to undergo the *formality* of examination, and requested that some special arrangement be made for him. As further evidence seemed to indicate an intention to test the law in such cases, the Commonwealth's attorney of Shenandoah County, Va., has put this doctor under bond for appearance before the October term of his Court. There is no reason why physicians from other States should be granted exemptions from the operations of Virginia laws not accorded our own citizens. Steps are being taken to bring to justice two other doctors practicing medicine illegally in Virginia—one in Powhatan County, and one in Goochland County.

The following is a Tabular Statement of Work done by the Medical Examining Board of Virginia, from the date (January 1, 1885,) the Law went into operation through the date of the above Report, October 9, 1888.

INSTITUTIONS REPRESENTED BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA. (From Jan. 1, 1885, through October 9, 1888.)	Total No. of Applicants from each.		Rejections, Total from each.		Certificates issued by Med. Ex. Board of Va.		No. Rejections making Second Applications.		Second Rejections.		Certificate Issued on Second Application.		Incomplete Examinations by withdrawals, etc.	
Medical College of Virginia	57	8	48	3	3	1								
University of Virginia, Med. Dep't	33	1	32											
College of Physicians and Surgeons, Baltimore, Md.	34	10	24	6	2	4								
Univ. of Maryland, Med. Dep't, Baltimore, Md.	34	9	25	3	1	2								
Jefferson Med. Col., Philadelphia, Pa.	12	3	9	2		2								
Univ. of Penn'a, Philadelphia, Pa.	2		2											
Bellevue Hosp. Med. Col., New York.	6	1	5	1		1								
Univ. of City of New York, Med. Dep.	7	2	5	1	1									
Col. of Physicians and Surgeons, N. Y.	3		3											
Louisville Medical College, Ky.	2	1	1											
Hosp. Med. College, Louisville, Ky.	3		3											
Kentucky School of Med., Louisville	2		2											
University of Louisville, Ky.	1		1											
Med. Dep't of University of Tennessee, Nashville.	1		1											
Vanderbilt Univ., Med. Dep't, Tenn.	3	1	2	1		1								
Detroit Med. College, Mich.	2	1	1	1		1								
Univ. of Michigan, Ann Arbor, Mich.	1		1											
St. Louis Medical College, Mo.	1		1											
Columbus Medical College, Ohio.	3	2	1	1		1								
Cincinnati Medical College, Ohio.	1	1												
Med. Dep't Howard University, Washington, D. C.	7	6	1	4	4									
Leonard Med. Col., Raleigh, N. C.	3	1	2											
Med. Dep't University of Georgetown, D. C.	1		1											
Hahnemann Homœopathic Medical College, Philadelphia.	2		2											
Medico-Chir. Col., Philadelphia, Pa.	3	3		2	2									
Geneva Medical College, New York.	1		1											
Heidelberg, Germany	1		1											
Baltimore Medical College, Md.	1		1											
Colleges Unknown.	4		3											
Non-Graduates.	11	4	5											
Cleveland Homœopathic Hosp. College, Ohio.	1		1											
Total number of Examinations.	240	54	181	25	10	15	5							

Number of Applicants examined by Individual Examiners out of Session. 117
 Number of Applicants examined by Board in Session. 123

N.B.—The first and second columns add up 243 and 184 respectively; but three of the applicants each gave two Colleges of graduation.

The following were elected

OFFICERS FOR THE ENSUING YEAR.

President.—Dr. E. W. Row, of Orange, Va.

Vice-Presidents.—Drs. Wm. S. Christian, of Urbanna, George S. Luck, of Roanoke, and L. Ashton, of Falmouth.

Recording Secretary.—Dr. Landon B. Edwards, of Richmond, Va.

Corresponding Secretary.—Dr. J. F. Winn, of Richmond, Va.

Treasurer.—Dr. Richard T. Styll, of Hollins, Roanoke Co., Va.

Committee on Applications for Fellowship at Annual Session, 1889.—Drs. Wm. D. Turner, of Ferguson's Wharf, R. M. Slaughter, of Theological Seminary, I. S. Stone, of Lincoln, Alfred S. Rixey, of Culpepper, and John Clopton, of Williamsburg.

Executive Committee.—Drs. Wm. W. Parker, of Richmond, Hon. Fellow J. Herbert Claiborne, of Petersburg, Jacob Michaux, of Richmond, L. Lankford, of Norfolk, and Hon. Fellow Hunter McGuire, of Richmond. The Recording Secretary and the Treasurer are *ex officio* members.

Committee on Publications.—Drs. C. W. P. Brock, George Ross, and Hugh M. Taylor, each of Richmond, Va. The Recording Secretary and Treasurer are *ex officio* members.

Necrological Committee.—Hon. Fellow Dr. J. Edgar Chancellor, of University of Virginia, Chairman.

To Deliver Annual Address to the Public and Profession, Session 1889.—Dr. Thomas J. Moore, of Richmond, Va.

Subject for General Discussion, Annual Session 1889.—Croupous Pneumonia.

Leader in this Discussion.—Dr. B. L. Winston, of Hanover C. H., Va.

Place of Annual Session 1889.—Roanoke, Va.

Time of Annual Session 1889.—About September 3—the exact day to be definitely fixed and announced by the Executive Committee some months hence.

The next order of business being the nomination to the Governor of

MEMBERS OF THE MEDICAL EXAMINING BOARD OF VIRGINIA

to serve for the regular term of four years, beginning January 1, 1889, Honorary Fellow Dr. J. EDGAR CHANCELLOR, of University of Virginia, introduced the following resolution:

Resolved, That the Medical Society of Virginia, desirous of showing their appreciation of the work performed by the Medical Examining Board of Virginia for the term of four years to terminate December 31, 1888, nominate each of the thirty-two regular physicians now representing this Society on that Board, and recommend to the Governor of Virginia to issue commissions in due form to each of those so nominated to serve for the reg-

ular term of four years, beginning January 1, 1889, as members of that Board.

This resolution was unanimously adopted.

The following are the thirty-two members of the regular profession, who are to compose the

BOARD OF MEDICAL EXAMINERS OF VIRGINIA

for the term of four years, beginning January 1, 1889, with their post-office addresses.

State at large.—Drs. T. J. Moore, Richmond, Va.; I. S. Stone, Lincoln, Va.

1st Cong. District.—Drs. S. W. Carmichael, Fredericksburg, Va.; O. B. Finney, Onancock, Va.; W. W. Douglas, Warsaw, Va.

2nd Cong. District.—Drs. Jesse H. Peek, Hampton, Va.; Herbert M. Nash, Norfolk, Va.; James Parrish, Portsmouth, Va.

3rd Cong. District.—Drs. R. A. Lewis, Richmond, Va.; C. R. Cullen, Richmond, Va.; Hugh M. Taylor, Richmond, Va.

4th Cong. District.—Drs. J. Herbert Claiborne, Petersburg, Va.; W. J. Harris, Blackstone, Va.; Hugh Stockdell, Petersburg, Va.

5th Cong. District.—Drs. Rawley W. Martin, Chatham, Va.; W. L. Robinson, Danville, Va.; T. B. Greer, Rocky Mount, Va.

6th Cong. District.—Drs. H. Grey Latham, Lynchburg, Va.; A. Trent Clark, South Boston, Va.; Oscar Wiley, Salem, Va.

7th Cong. District.—Drs. Wm. P. McGuire, Winchester, Va.; J. H. Neff, Harrisonburg, Va.; Hugh T. Nelson, Charlottesville, Va.

8th Cong. District.—Drs. C. C. Conway, Rapidan, Va.; Alexander Harris, Jeffersonton, Va.; Bedford Brown, Alexandria, Va.

9th Cong. District.—Drs. Robert J. Preston, Marion, Va.; R. W. Huffard, Chatham Hill, Va.; S. W. Dickinson, Marion, Va.

10th Cong. District.—Drs. Z. J. Walker, Brownsburg, Va.; H. M. Patterson, Staunton, Va.; G. D. Meriwether, Green Forest, Va.

OCTOBER 25—THIRD DAY.

The Corresponding Secretary, DR. J. F. WINN, of Richmond, presented a circular letter from the Publication Committee having charge of the

REVISION OF THE UNITED STATES PHARMACOPEIA,

requesting this Society, in common with every other regular State Medical Organization, to appoint a Committee of three to act with the Publication Committee of the American Pharmaceutical Association, in perfecting the revision of the volume to be issued in 1890.

DR. R. M. SLAUGHTER, of Theological Seminary, moved that the Committee of three be appointed as requested—carried: The President appointed Drs. R. M. Slaughter, Wm. B. Towles,

of the University of Virginia, and John N. Upshur, of Richmond.

The Treasurer, DR. RICHARD T. STYLL, of Hollins, Va., presented his report for the year just ended, showing a balance on hand of \$229.18.

Instead of a formal "Report on Advances in Surgery," to which task he had been assigned, DR. WM. EDWARD MCGUIRE, of Richmond, read a paper on

PATHOGENIC GERMS OR MICROBES, AND SOME CONDITIONS RELATING TO INFECTION.

He said that the "pathogenic micrococci" of chief interest to the surgeon are those of open wounds, such, for instance, as the micrococcus of syphilis, gonorrhœa, acute infectious osteomyelitis, progressive necrosis, etc. The "pathogenic bacilli" are those of syphilis, tubercle, tetanus, anthrax, ulcerative stomatitis, etc. The baneful influences exerted by these organisms on living bodies have been explained in four ways: Acting as an invading army, they destroy the raw food of the weaker inhabitants (the tissue-cells), which require more complex bodies for their assimilation; or (2) they interfere with the due performance of the depurating organ, and produce disease by preventing the elimination of urea and other final products of repressive metamorphosis; or (3) as microbes, along with all living beings, produce excretion, and this excretion is discharged into the body of the animal in which the microbes live, it would produce deleterious effects as certainly as if the animal's excretions had been retained; or (4), as is most generally accepted, the injurious effects produced by microbes is not due to what they take or excrete, but to what they leave; and this is associated with the demand they make for the oxygen of the tissues. Living and multiplying without direct exposure to air, they obtain their required oxygen from the tissues by which they are surrounded; and when oxygen is withdrawn from such complex chemical compounds as our tissues are composed of, the elements enter into new and abnormal combinations (ptomaines) which are believed to be the really poisonous agents. Depression of vitality of the part attacked is an important factor in the process of infection. An essential condition in the production of local depression is inflammation. Practically, the microorganisms enter the body in the first stage of inflammation. Much depends on the part of the body exposed to infection—some microorganisms infecting only one part of the body, and others another part. Pettenkoffer believes that everything that increases the amount of water in the blood predisposes the individual to infectious diseases.

Under call for "Reports in Chemistry, Pharmacy, Materia Medica and Therapeutics," the Chairman, DR. R. A. LEWIS, of Richmond,

presented the report, prepared by Dr. Joseph M. Whitfield, lately of Richmond, but now resigned and removed to New York, on

ADVANCES IN CHEMISTRY.

Organic chemistry is the branch attracting special study at present.

Incompatibilities should be better known by physicians. Thus, iodol is incompatible with yellow oxide of mercury, and yet with those unfamiliar with chemistry, such a prescription is often written for an ointment. But in a week's time the neat-looking yellow homogenous ointment changes to a dirty grayish mixture. The trouble is the excess of iodide in the iodol is given off and decomposes the yellow mercuric oxide.

Saccharin, or saccharinic acid, the sweetest of all known substances, belongs to the group of coal-tar products, and is antiseptic. It is claimed also that it acts directly on the fourth ventricle, and thereby diminishes the amount of sugar produced in the system. It is a boon to diabetics having the proverbial "sweet tooth." It is dispensed in half to one grain tablets. One grain will make a cup of coffee too sweet for most persons. It combines readily with most alkaloids, such as quinia, morphia, cocaine, etc. As it prevents fermentation, it is used in gastric and intestinal disorders.

Cocaine saccharinate is about four-fifths the strength of cocaine muriate, but has no bitter taste.

Antipyrin and antifebrin are noted as derived from amilide. Antipyrin is a proprietary drug, and cases of poisoning by it have been reported; but no case of poisoning by *antifebrin* has yet come to light, nor does it interfere with the digestive tract as does antipyrin. Besides, its effects in smaller doses lasts longer; it stimulates rather than depresses the vaso-motor and muscular systems; it has no after effects, and it is very much cheaper than antipyrin. Antipyrin is strongly recommended as a prompt hæmostatic, leaving the wound clean.

Phtalates are salts formed by the action of the organic acid—phtalic acid—on vegetable alkaloids. The special advantages claimed for these salts is their great solubility and stability.

Sulfonal, an oxidation product of ethyl-mercaptan with acetone, is tasteless and colorless and crystallizes in large tablets, easily soluble in alcohol and in two parts of water. It is hypnotic in doses of from gr. xx-xxx.

Amylene hydrate, or di methyl-ethyl-carbynnol, is a tertiary amylic alcohol—a clear liquid having an ethereal odor and a camphor-like taste. It ranks between chloral and paraldehyde as a hypnotic. It is safer than chloral, as it does not depress the heart or respiratory centres, and has not the nauseous taste nor cause the disagreeable eructations of paraldehyde.

Urethran, or ethyl-urethran, produces sleep like normal sleep, leaves no headache nor gastric disturbances, and only slightly slows the pulse. It is soluble in water and its taste is not unpleasant. Dose for infants from 12 to 18 months old, about 4 grains.

Menthol, or peppermint camphor, is a soluble crystalline salt, looking like Epsom salts, deposited when Chinese oil of peppermint is exposed to cold, forming stearoptine of peppermint oil. It equals thymol as an antiseptic, and hence its use in diphtheria, typhoid and scarlet fevers, etc.

After some notes about cocaine, jambul seed is mentioned as a new treatment for diabetes mellitus. Dose of the fluid extract of the seed, from 5 to 10 minims.

Succinimide of mercury for hypodermic purposes seems to be a valuable preparation. It is a white, silky powder, prepared by heating together ammonia and succinic anhydride, and then adding mercuric oxide. It is very soluble in water and the solution is a permanent one. It is cheap.

DR. H. ROLFE DUPUY, of Norfolk, Va., read the report on

ADVANCES IN MATERIA MEDICA AND THERAPEUTICS.

In reviewing the literature on this subject during the past year, he called special attention to the two great antipyretics, antipyrin and antifebrin, showing their uses and abuses, and the particular indications for each, claiming for the latter the greatest and most varied use. Strophanthus was urged as the great heart tonic, particularly when used in connection with ether, and also with nuxvomica. Attention was called to the great value of ichthyol in skin diseases and rheumatic pains. The literature about salicylate of ammonia was reviewed *in extenso* in connection with the treatment of typhoid and remittent fevers. Salol, sulfonal, sparteine, pichi, jambul and other new remedies or preparations came in for their appropriate share of attention. In conclusion, he condemned the use by physicians of proprietary preparations which did not have attached to the description a working formula for the guidance of the pharmacist.

Dr R. C. POWELL, of Alexandria, read a paper on the

ETIOLOGY OF PYREXIA FROM THE STAND-POINT OF MODERN PHYSICS.

He remarked that no theory based wholly on demonstrated science has yet been offered to explain the high temperature in pyrexial diseases. Any attempt to explain the phenomenon by a theory not in harmony with the laws of conservation of energy or correlation of forces is not worth consideration. After a full discussion of numerous theories, he presents the following as his conclusion:

1. The matter of the human body is identical with that of the world around us; and the forces of the human body are the same as those of inorganic nature. This body as a piece of mechanism are more perfect than any other apparatus for the transformation and distribution of energy, with which it is supplied, but possesses no creative power.

2. The relation between combustion and heat is coincidental, and not causal. If heat is the result of collision between carbon atoms and oxygen atoms, this collision must precede that intimate union of such atoms which is termed combustion; and as the effect can never precede the cause, heat cannot possibly be the effect of combustion.

3. The oxidation of tissues *cannot* be exaggerated by the presence of micro-organisms whose very existence is maintained by the *absorption* of oxygen from these tissues.

4. In all *essential fevers*, the pyrexia is probably due to increased molecular motion.

5. The rapid waste of fatty tissue in fever is not so intimately connected with the production of heat as with the production of energy—some of which is manifested in the accelerated action of respiration and circulation.

6. In sympathetic pyrexia, heat is a form of energy which, by reason of traumatic lesions of the nervous system, is prohibited from expending itself in functional activity or motion, and is therefore transmuted into heat, which is the form most frequently assumed by transmutable energy.

7. The only rational way to treat essential fever is to destroy the cause of it; but for agents to cause this destruction, no enthusiastic search will be made until we repudiate the idea that the great object in the treatment of fever is to place the system in the most favorable condition for recuperation after the disease shall have run its course.

Dr. LEWIS G. PEDIGO, of Roanoke City, read a paper entitled

ANTAGONISM BETWEEN AMYL NITRITE AND PRUSSIC ACID.

After certain preliminaries, he gave an account of three representative experiments out of a series that he had performed on lower animals, illustrating the use of amyl nitrite by inhalation as a treatment for prussic acid poisoning. The experiments consisted in administering the poison in large doses—hypodermatically—and beginning the use of the antidote at once by inhalation. Collateral experiments were reviewed in which the poison was given in equal or smaller doses and the antidote withheld. The effects were observed and compared, always showing a remarkably heavy balance in favor of the remedy. In one of these experiments a dog's life was saved by the use of the nitrite of amyl from the action of the same dose which had just killed a similar dog in five minutes and fifteen seconds, without treat-

ment. In commenting on the experiments, a theory was evolved to explain the action and antagonism of the two drugs. The convulsion and arterial spasm of prussic acid poisoning were attributed to paralysis of the inhibitory nerve centers. The relief of these symptoms by nitrite of amyl was accounted for on the supposition that this drug stimulates those centers. The two drugs were shown to antagonize each other in six distinct physiological items, thus proving the amyl to be a more nearly perfect physiological antidote to prussic acid, than is known for any other poison. He suggests the use of the same remedy in cases of poisoning by other cardiac depressants, and enumerated aconite, veratrum viride and gelsemium.

(To be concluded.)

Obstetrical Society of Philadelphia.

Stated Meeting, October 4, 1888.

THE PRESIDENT, T. M. DRYSDALE, M.D.,
IN THE CHAIR.

(Continued from page 679.)

DR. B. F. BAER read the following report of

TWO CASES OF MULTIFOCULAR OVARIAN CYSTOMA of unusual size and very rapid growth. Mrs. T. was sent me by Dr. J. A. Clark, of Bedford, Pa., and on July 31st entered my private hospital. She is æt. 28 years; married; has had two children after normal labors, the youngest being six years of age. About nine months previous to this date, she was attacked with severe pain in the right ovarian region and was confined to bed for several weeks. Her menses had always been regular, but at this time the flow was profuse and continued two weeks. Soon after this attack of pain and metrorrhagia she noticed a swelling in the painful region, on the right side. She rapidly increased in size and began to lose flesh, and occasionally to have attacks of pain and metrorrhagia similar to the one noted above, the flow for several occasions lasting for a month. Her abdomen was enormously distended, especially in the upper portion. It was rather symmetrical, dull on percussion all over the anterior and lateral portion except in the lumbar regions, where slight resonance was observed. There was fluctuation in the lower part, but in the upper portion it was very obscure. The skin on the lower surface of the abdomen was in a condition of elephantiasis.

Vaginal examination revealed the uterus slightly retroverted, rather mobile, and gave a sound measurement of three inches. The lower surface of the tumor could just be felt by the vaginal examination. The patient had a very weak pulse, indeed it could not be felt at all at

the left wrist and she had great dyspnoea on the slightest exertion.

Operation was performed on August 2nd. I was assisted by Drs. J. C. Bowen, G. H. Franklin, J. A. Clark and H. C. Bloom. An incision three inches in length was made in the usual position. The skin at the point of the incision was fully half an inch thick and very vascular and considerable subcutaneous adipose tissue was present. As soon as the tumor was reached it presented the appearance common to ovarian growths, but it was found to be closely adherent to the abdominal wall. After separating as far as the finger would reach, the tumor was punctured with Tait's large trocar, and about four gallons of greenish fluid drained away; but only the lower portion of the tumor collapsed, the greater and upper portion remained as before. This was punctured in a number of places without removing the instrument from the cavity which had been drained, but nothing followed. The opening in the tumor was now enlarged and the hand introduced and the multilocular condition broken down, large pieces of semi-solid substance being torn loose from the cavity of the tumor and brought away, together with a great deal of semi-fluid debris. As soon as room was gained the hand was carried outside the tumor, when it was found to be adherent to the liver, stomach, and everything with which it came in contact. These adhesions were carefully separated and after considerable effort the remainder of the tumor was finally brought out through the incision, which had been previously increased to three and a half inches. The pedicle, which was found to be thick and quite vascular, was transfixed and ligated and the tumor cut away. The cavity was irrigated with filtered boiled water, as much as two gallons being used. The irrigating tube was carried in every direction until the water returned clear. The right ovary was not removed, it being in apparent health. The wound was closed around a drainage tube. There was considerable shock. The pulse could not be felt at either wrist and it was two days before it returned, although the patient seemed to be doing well. The usual after treatment was carried out and the patient has made an excellent recovery. She went home (250 miles) on the twenty-seventh day and still remains in good health. The temperature never rose above 100° and the drainage tube was removed on the second day. The tumor was a multilocular cyst and weighed about ninety pounds.

On September 5th I was asked by my friend Dr. R. Armstrong, of Lock Haven, to meet him in consultation in a case of abdominal tumor, which he stated was in such extreme condition that he feared she might not live until my arrival.

I saw the patient on September 6th. She is 21

years old and single; puberty had occurred at twelve and menstruation had always been profuse, coming on every three weeks and always attended with some pain; she did not consider this abnormal, and so far as she knew was perfectly well up to four months previous to the above date. In the latter part of April of this year after unusual exertion about the house, she was suddenly attacked with severe cramp-like pain in the right iliac region, so severe indeed as to alarm the neighbors by her outcries. This attack occurred about the time of her expected menstruation and continued until the flow followed, when she gained considerable relief. But she remained ill from that time, being able to go about, however, in the intervals between the series of attacks of pain of similar character which now followed. Within two weeks after the first attack she noticed that her abdomen was increasing in size in the painful region and from that time to the present, just four months, her abdomen has grown to an enormous size. I found her occupying a semi-recumbent posture and breathing with difficulty. She was emaciated to such a degree, and the tumor was of such size, that she was almost hidden from view beneath it. The surface of the abdomen was purple from interference with the capillary circulation and the veins were greatly distended. The abdomen was symmetrical and smooth. Fluctuation was rather obscure. There was dulness on percussion all over the anterior and lateral surfaces of the tumor, except at a point far back in the left lumbar region, where slight resonance was found. On the upper right border of the tumor, in the region of the liver, there was an apparently solid mass, shaped somewhat like the liver, suggesting the possibility that the cyst had grown from that organ. This was given more prominence on account of the rapidity of the growth. The patient was unable to retain anything on her stomach; she had not slept except at short intervals, for weeks. Her bowels were constipated and the urine was passed frequently and in small quantities. Her pulse was 140 and very feeble. Her expression was an appealing one and she begged to be relieved.

A tablespoonful of whisky was given and repeated in two hours, just before the administration of the anæsthetic. I was ably assisted in the operation by Drs. Armstrong, Ball, and Watson, of Lock Haven. An incision two inches in length was made. The surface of the cyst was adherent to the peritoneum. After separating the adhesions as far as I could I plunged a large trocar into the tumor. But the contents were semi-solid. I therefore cut through the cyst-wall and proceeded to break up and remove the contents. The cyst was adherent to everything it touched, liver, stomach and other viscera, but the adhesions were weak, and in ten minutes' time the tumor was removed and the pedicle, which was thick and vas-

cular, was ligated. The omentum was so firmly adherent to the cyst that it was ligated and amputated. The friable cyst-wall was ruptured in many places and a great deal of the viscid semi-fluid material escaped into the abdominal cavity, but I did not lose time in trying to prevent this. When the tumor was removed what was left of the patient was an exceedingly small portion. The emaciated abdominal walls lay close to the spinal column and sunk into the pelvis. She looked more literally "nothing but skin and bones," than anything I had ever seen before. The abdominal cavity was thoroughly washed out by irrigation through a fountain syringe, and I was careful to pass the nozzle high up among the intestines and under the surface of the liver and diaphragm. The water returned clear and the incision was closed around a drainage tube and the patient returned to the bed with a better condition of pulse and appearance than she had before the operation. She did not show any evidence of shock and was conscious almost as soon as she was placed in bed. Her body was so emaciated that it was necessary to pack with cotton about the pelvis and along the spinal column, as the bones almost projected through the skin, and at several places bed-sores were apparent. The R. ovary seemed smaller even than its natural size and appeared thinner; it was therefore not removed. The after history of the case has been without event. Her temperature never rose above 100° and was normal on the third day after the operation. The pulse gradually diminished from 140 and was normal on the fifth day. The drainage tube was removed within thirty-six hours after operation. The sutures were removed on the eighth day, when union was found complete, except at the lower portion where the drainage tube had been, and this has since healed. She began taking solid food on the third day and on the fourth day her bowels were moved. The tumor weighed about 75 lbs.

The points of considerable interest in these cases are the location, character, and severity of the early symptoms, as well as the location of the tumor when first noticed (in the right side), while the tumors were of the left ovary, the right being perfectly healthy; the large size and very rapid growth of the tumor; the rapid recovery of the patients although in extreme condition, especially of the case last mentioned; the fact that the two cases are alike in nearly all particulars, the only difference being that in the second case the rapidity of the development was much greater, and the severity of the symptoms likewise greater; and lastly, the method of removal of the tumor, that is, the breaking up of the semi-solid contents with the hand, thereby permitting their removal through a very short incision. I wish here to call attention to a fatal case which occurred in my practice several months ago and which forcibly

illustrates that there may be danger in introducing the hand for the purpose of breaking down contents of the tumor, not knowing exactly the location of the intestines. In the case referred to the friable wall of the main cyst had ruptured and some coils of intestines were found to be in the cavity and closely adherent to the more solid portion of the contents. Very careful manipulation was necessary to separate the bowel, which was finally done after considerable time had been spent in the effort. Ordinarily, however, where the cyst has not previously ruptured the procedure is a safe one when due care is observed.

DR. M. PRICE reported a case of

PYOSALYNX WITH RUPTURE.

On the 6th of September I was called to Mrs. —, with symptoms of miscarriage, with pains, hæmorrhage and slight odor to the discharge. She refused to have an examination, saying she knew she was not pregnant. I left her with the understanding that when she was ready for me to examine her to send for me. On September 10, I was again called, and found her in great pain; the discharge of blood and broken down placenta were of the most offensive character. She stated that she had been perfectly regular up to her last period, which was delayed about one week. She had considerable fever, a temperature of 102°, and had had that morning a severe chill. On examination the uterus was found about four inches in depth, with part of a rotten placenta adherent to its right posterior wall. The uterus was in good position and perfectly movable, with both tubes enlarged and thickened, and at this time could not have been adherent to any surrounding structure. I removed the placenta with considerable difficulty, used hot water irrigation with boric acid in the uterine cavity, which, for a time, gave her great relief. These irrigations were continued, and the uterus washed out twice a day for three days, all this time the tubes continuing to enlarge, until they must have contained several ounces of matter, and could have, at this time, been easily removed. The irrigation into the uterus were discontinued, and those of the vagina were kept up. I became very much alarmed at her condition, and stated to the husband that an operation was needed to save his wife's life. This he refused, and begged that I should do all I could without the operation. I yielded to his request much to my regret, for I felt that nothing but an immediate operation and removal of the tubes, which then would have been possible, as there had been little if any leakage up to that time into the peritoneal cavity, would save her life. I believe that any man treating a case of this kind with the symptoms as positive and the indications as plain as they were in this case for operation, should have retired from the case, for by so doing, he clearly indicates that his mind is

made up as to the treatment and the only chance to save, and by so doing, shows to the medical attendant who may be called to the case, the proper line of treatment, and if he does not take the warning, the post-mortem will follow and show who was right. There were several well-marked changes in her condition, indicating rupture or leakage from the tubal abscess, and her condition steadily grew worse until the 20th, when in consultation with my brother, we persuaded the family and the patient to let me operate and give her that chance for life, as she was in a very bad septic condition. As the consultation was at a very late hour at night, she was opened early the next morning (21st). I found the internal organs matted together, uterus much enlarged, both tubes enlarged and ruptured, adherent to everything they touched, pelvis full of pus cavities, pus cavities almost up to the kidneys on both sides; everything in a semi-gangrenous condition; but little bleeding from ruptured adhesions or from wound in opening abdomen, which is never a good indication. A great quantity of pus was evacuated, at least two pints, of the most offensive character. Irrigation and drainage were used. The patient was a very large woman, consequently the longest drainage tube we could find was used. She rallied from the ether, and for the first six hours there was discharge from the drainage tube, two pints of very offensive serum. It gradually lessened in quantity, but increased in offensive character. A cleaning of the tube was made every half hour; before cleaning warm boracic water was injected through the tube. It improved matters only for the moment. Patient died twelve hours after the operation. Present at the operation: Drs. Joseph Price, E. W. Cushing, of Boston, Atherton, Toronto, Roseburg, Hamilton, Ontario.

DR. W. H. PARISH said that his remarks on this subject of pelvic abscess read at the recent meeting of the American Gynecological Society had been misquoted. He had stated there, and wished to repeat here, that these abscesses should be opened very early. If operation was not resorted to the patient would most probably either die or become a confirmed invalid. He was not one of those who believe that pus always originates in one particular point in the pelvis. He did, however, believe that the large majority of cases occur because of pus primarily in the tube. He believed, also, that an uncertain number of cases occur from pus originally formed in the areolar tissue, beginning probably because of lymphangitis of that particular locality. The question arises as to how best to operate in these cases. He said that there could be no absolute rule of procedure. He believed that, in the majority of cases, it was wiser to make an opening in the median line and explore the peritoneal cavity, unless we are very certain that the abscess is not

in the tube or ovary. If we are sure that there is no involvement of the appendages and that the pus is not intraperitoneal, the abscess may be opened without going into the cavity. He called attention to a procedure which he had adopted in a few instances, where small abscesses were located in pelvic areolar tissue. In one instance Dr. Longaker made an incision in the median line. The tubes and ovaries were found free from pus, but of course congested. With the fingers within the abdomen he felt in the anterior pelvic wall an abscess. An incision was made over Poupart's ligament as for ligature of the external iliac. Then passing deep into the pelvis, pus was reached some distance below the brim of the pelvis. In another case there was an indurated mass apparent above the left half of the pelvis, not very recognizable through the vagina, except on very deep pressure. An incision was made above Poupart's ligament. After cutting through very dense tissue, he came to a minute cavity which contained no pus, but a somewhat serous fluid containing flakes of lymph. These are only two of a considerable number of pelvic abscesses in which he had operated, and he had never regretted operating early.

DR. J. M. BALDY wished to take this opportunity of emphasizing views which he had expressed before the recent meeting of the American Gynecological Society. He did not agree with Dr. Parish as to the pathology of this affection. He granted that there was the possibility of an abscess occurring in the pelvis, such as occur in other parts of the body from the scalp to the foot, but that these must be most rare. The gentlemen connected with what Dr. Parvin had been pleased to call "the Philadelphia Dispensary School of Surgery" had now done over one hundred of these operations, and had not yet in a single case come across one which had not begun primarily in the tubes or ovaries. In every case the diseased mass removed has been tube, ovary and other tissues involved. (Dr. Parish, at this point, asked wherein his views differed from those of Dr. Baldy?) He had to leave that to be inferred from what Dr. Parish had said. In regard to treatment he must again dissent from the views expressed. He thought that an absolute rule *could* be laid down. Where pus was found in the pelvis, early or late, the proper procedure was to open the abdominal cavity, and where it was not possible to remove the seat of the disease, proper drainage should be established. However, it would be found comparatively seldom that the abscess could not be taken out by a bold operator.

DR. JOSEPH PRICE thought that he understood Dr. Parish. He himself had said repeatedly that we might have an abscess in any part of the body from the scalp to the matrix of the nails, we may have it in the cellular tissue of the pelvis as well as in the axilla or neck, but he must hold to

what he had said, that in all the pelvic abscesses that he had seen he had not found one not due primarily to tubal disease. Among the recent papers on the subject, one calls attention to the treatment by drainage through the vagina. He did not see how this will avail much in bilateral accumulations. You may evacuate half of the tube, but you have left a condition of affairs such as is found in an old bubo. In pelvic abscess we have just the condition of affairs which the surgeon is asked to treat in the groin, axilla or popliteal space. In such a case he would remove the disease by a clean enucleation and perfect a cure. He had not seen a case of pelvic abscess which could not be removed in this way and he should say that such cases did not exist. One gentleman at Washington went so far as to say, that after drainage by vagina in a case of double pyosalpinx, recovery had followed—the woman had borne children. He might as well have said she had conceived, notwithstanding her husband had previously been castrated.

DR. M. PRICE remarked that it was a question whether you could say that the tube was diseased or not, by simply looking at it. He remembered a case a few weeks ago, where the tube was congested and inflamed. It seemed to be simply swollen, but on pressure there was forced from the *fimbriated end* a drop or two of as perfect gonorrhœal pus as could be found anywhere. If he had not seen the discharge, he should have thought that there was no disease save congestion.

(To be concluded.)

FOREIGN CORRESPONDENCE.

Pettenkofer's Views on Zymotic Diseases and Quarantine.

[The following is translated from manuscript given by Professor von Pettenkofer to Dr. Horatio R. Bigelow, for THE JOURNAL.]

For thirty years I have held the opinion that all the so-called zymotic infectious diseases (typhoid fever, cholera, yellow fever, etc.) are caused by lower organisms, and that the specific germs are spread by human intercourse. I differ from the contagionists, however, in the important particular that I place the causes of the epidemic diseases, so far as they show a striking dependence upon locality and season, not in people, but in their surroundings.

I classify infectious diseases as entogenous and ectogenous: entogenous when the virulent infectious material is simply transferred from the infected to the healthy person, and infects him (such as small-pox, syphilis, etc.); ectogenous when the germ spread by human intercourse must first go through a certain stage outside the human organism in order to increase and become virulent,

and become capable of infecting, as for example malaria.

It is not the cholera patient nor the yellow fever patient that infects, but the cholera locality and the yellow fever locality. Physicians and nurses, therefore, are no more affected than persons who do not come at all in contact with the patients. In a hospital containing cholera or yellow fever patients, but which is not a cholera or yellow fever locality, the nurses and attendants remain healthy, and other patients are not infected. Of course a hospital, just as well as other houses, may become an infected locality, and in that case attendants and other patients may become infected; a so-called house epidemic breaks out, but in this case the infection is due to the locality, not to the patients. So it is in barracks in which epidemics break out without a sick person having been previously brought there.

House epidemics in hospitals in which cholera patients are assembled are not more frequent nor more severe than house epidemics in barracks in which every suspicious case of diarrhœa among the soldiers is immediately removed—isolated.

For infection there must be not merely the presence of infectious material, but there must be also a certain quantity of it. It is true, so much locally produced infectious material may be carried from cholera and yellow fever localities, in individual cases, by human and other means, into other places, that infection is produced; but this seldom occurs, and does not cause epidemics, but sporadic cases only, when the germs do not fall on fruitful soil, and the place is not disposed to the ectogenous spread of infecting material.

There are places that always have immunity from imported infectious material (such as Versailles, Lyons, etc.), but the affected places have immunity from ectogenous development of the imported germ, which alone is capable of causing infection, only temporarily and now and then.

As in places in which cholera or yellow fever is endemic there is often a considerable length of time in which there are no patients, or they are very few, without the specific poison having disappeared from the place, and then again there are numerous cases after a little time, without the infectious material causing them having been newly imported, so may the specific material from cholera or yellow fever localities, carried to other places by human intercourse, cause an epidemic after it has had time for development (which time, according to Pettenkofer's observations, may be many months).

For this reason we seldom find the trace of personal or local connection between the first cases in a country or in an active commercial city, as well between one another as with immediately preceding foreign cases, or cases brought from without.

For this reason also all quarantine regulations of land and water, all disinfection and isolation,

which are limited to the known cholera or yellow fever patients, are always ineffective.

Pettenkofer cites many facts going to show that cholera epidemics do not become more violent and do not last longer when intercourse with cholera patients is not limited to the least extent, and when neither isolation nor disinfection are practiced. Where these measures seem to have been used, the local and temporary disposition of the locality was wanting. So soon as there is this disposition in a place, and the specific material is present, the disease breaks out, and all measures based on the grounds of the contagionists are futile.

In order for the disease to occur there is necessary not only a sufficient quantity of the specific infectious material, but also an individual disposition. When a number of people are exposed to the same influences of intercourse and infected locality, all of them are never attacked, but only a small number, corresponding to the more or less developed individual disposition. The duration (?) of the disease—even in a slight degree—protects for a considerable time against repeated infection.

Some are inclined to explain the temporary outbreak and the gradual subsidence of a cholera epidemic in a place by the existence of individual disposition and its subsequent exhaustion. This is a mistake, however, for were it true there would be no places having immunity, whose inhabitants could pass through the disease, and after the introduction of the poison severe epidemics would certainly break out. Nor can the extinction of the local epidemics be explained on the theory that there are no more disposed persons in the place. The explanation must be that the place ceases to produce virulent infectious material. When this happens disposed persons come in greater number from without, and the epidemic is extinct (Leipzig, 1866, and Messina, 1887).

The occurrence and conduct of cholera on board ships, in the light of later examination, are very much against the contagionist and more in favor of the locality views.

The drinking-water theory is applicable neither to cholera, nor to yellow fever, nor to typhoid. In non-sterilized water cholera bacilli and typhoid bacteria perish quickly, partly for want of suitable nutritive material, and partly also from coming in contact with the non-pathogenic water bacteria; and even when they are viable in a cholera or typhoid stool in wells or water-pipes, the infectious material is so extraordinarily diluted, that infection from the use of such water cannot occur. Hitherto there has been no experiment on animals that has succeeded in infecting one of them with pathogenic micro-organisms (of anthrax, chicken cholera, etc.) through drinking-water; and this is in complete accord with epidemiological facts. Nevertheless, Pettenkofer is enthusiastic on the subject of good drinking-water,

because clean and pure water is generally a deeply felt want, and is a necessity not merely in typhoid and cholera places, but in all other places.

As regards the prophylactic measures, these should be directed: 1. Against the spread of the germs of specific disease by human and commercial intercourse. 2. Against the individual disposition. 3. Against local disposition.

The spread of the specific germ can be hindered only by the discontinuance of all personal and commercial intercourse with infected places, but never by a mere watching and regulation of such intercourse, since this is never, in the bacteriological sense, fungus-proof. As a rule the germs are already spread before a patient is discovered in a place. All the rules in this direction have, therefore, been without good result, whether applied to land or water. The cessation of all intercourse for a long time, for a series of years, even were such a thing possible, would be a greater misfortune than cholera and yellow fever.

It would certainly be better if people could be freed from the individual disposition, or even if this could be lessened, as in the case of small-pox by vaccination. It is possible that an inoculation material may be found for cholera, but thus far none has been found to serve the purpose.

We have well-tryed measures against local disposition. The most important part of the local disposition is uncleanness of the soil due to human excreta. Cleansing and keeping clean the soil upon which our dwellings stand is the best prophylactic measure against cholera and typhoid epidemics, and probably also against yellow fever. Wherever there is proper house-drainage and removal of every kind of excrement and garbage by canalization, removal of all privy vaults, and of all material that will not float, the disposition to these diseases is either entirely destroyed or very much diminished. England, for example, in spite of its unbroken and very free communication with cholera-infected places, and in spite of several important cases of cholera, since 1866, in consequence of its sanitary improvements, it has had no epidemic of cholera. The City of Munich, formerly known to the whole world by reason of its numerous cases of typhoid fever, has now only 14 cases per 100,000 yearly, instead of 300 per 100,000 as in former years. There are places so fortunate as to have a natural immunity against cholera. But even those places that have not natural immunity, can be rendered free of disposition by hygienic art (such as Fort William at Calcutta).

But the measures for giving immunity to a place should not be delayed until an epidemic breaks out, but should be carried out beforehand, so as to be truly prophylactic. An unclean soil cannot be made clean suddenly, even when man ceases to pollute it further, but it requires time for self-cleansing; just as a field does not become

suddenly unfruitful when we cease to fertilize it. It requires time, and more or less according to the quality of the soil.

These and many other important epidemiological facts are laid down in Pettenkofer's writings. The most important are to be found in his two recent works: "Zum gegenwertigen Stand der Cholerafrage," Munich, 1887, and "Der epidemiologische Theil der Berichtes über die Thätigkeit der zur Erforschung der Cholera im Jahre 1883 nach Aegypten und Indian entstanden deutschen Commission," Munich, 1888.

Local factors are more prominent in yellow fever than in other infectious diseases. In yellow fever the local limitation is much narrower. The epidemics usually occur on the seashore and on the banks of large rivers, and do not extend far inland. Temperature, brakish water, or soil water containing a good deal of salt, in the soil has a local influence.

The researches of Professor Billings, of the University of Nebraska, in regard to cattle plague or Texas fever and yellow fever show many analogies to the views of Pettenkofer.

NECROLOGY.

Henry B. Sands, M.D.

HENRY BERTON SANDS, probably the best known of the surgeons on the Atlantic seaboard, died of apoplexy, in his carriage, November 18, with an appalling suddenness. He was born Sept. 27, 1830, in New York City, and was throughout life identified with it as a resident. His father, also a native of the city, was long and favorably known as one of its most trustworthy apothecaries. He was from the very beginning of his career an earnest and enthusiastic student, with somewhat of an outside bias for instrumental music, having in early life even filled the position of organist in one of the leading churches.

Dr. Sand's name was long associated with the New York College of Physicians and Surgeons as Demonstrator of Anatomy, Professor of Anatomy, and Professor of Surgery. Besides these positions, he was connected with nearly all the hospitals of that city, either as Visiting or Consulting Surgeon. His society membership was also extensive.

As an operator, Dr. Sands probably had no superior as a rapid, graceful and skilful manipulator—these qualities added to an almost unerring judgment and a certain diagnostic instinct, gave him a fame, which out-leaped the barriers of his home. His success as a laparotomist was almost unique, and there were but few cases of appendix vermiformis disease in his native city or environs which were not in some way brought to his notice.

Of a marvellous industry, and unimpeachable punctuality conjoined with a devoted loyalty to his profession, and an ever-present modesty, he was a favorite consultant with his brethren far and near. His reputation certainly rests upon a very secure basis.

MISCELLANEOUS.

A DIPHTHERIA SCARE prevails at Alden, Iowa, and the town schools have been closed.

DR. D. HAYES AGNEW will, it is reported, soon resign the Chair of Surgery in the University of Pennsylvania.

CONGENITAL DEFECTS.—Dr. R. R. Williams, of Manning, Ia., informs us that in October, 1888, near Manning, a child was born with but *one* hand and wrist.

BAD MEAT IN OMAHA.—The Omaha Meat Inspector's report shows that 3,485 pounds of diseased meat and six gallons of oysters have been condemned during the past month.

NORTH CENTRAL ILLINOIS MEDICAL ASSOCIATION.—The fifteenth annual meeting of this Association will be held in the M. E. Church, LaSalle, Ill., on Tuesday, December 4, 1888, at 10:30 A.M.

THE SOUTHERN ILLINOIS MEDICAL ASSOCIATION met at Duquoin on Nov. 15. On the second day, after an interesting and profitable meeting, the Association adjourned to meet in Metropolis on June 15, 1889.

DEATH OF AN ALLEGED CENTENARIAN.—Mrs. Hannah Sharkey, the oldest woman in Ohio, died at Youngstown, Ohio, a few days ago. She was said to have been 111 years old, having been born in Cork, Ireland, in 1777.

UTICA MEDICAL LIBRARY ASSOCIATION.—The following are the officers for the ensuing year: President, Dr. J. G. Kilbourn; Vice-President, Dr. Chas. J. Wagner; Secretary, Dr. D. C. Dye; Treasurer, Dr. H. Quin.

SOUTH KANSAS MEDICAL ASSOCIATION.—The twenty-sixth semi-annual meeting of the South Kansas Medical Society met in Hutchinson on November 13. There was a large attendance of leading physicians from all over the southern portion of the State.

SCARLET FEVER.—A dispatch from Jamestown, Dak., says that an epidemic of scarlet fever is raging there. Churches, Sunday-schools and public schools have been ordered closed during the prevalence of the disease. A number of deaths have already occurred.

A PROBABLY FATAL ACCIDENT to Dr. Nathan Rogers, of San Francisco, occurred on November 2. His horses ran away, overturning the carriage and throwing Dr. Rogers out. His head struck the curbstone, resulting in a fracture of the skull which is pronounced fatal.

CREMATORIES.—At the congress of the advocates of cremation recently held in Vienna it was stated that there are throughout the world fifty crematories, half of which are in the United States, twenty in Italy, and one each in Germany (Gotha), England, France and Switzerland.

A SCHOOL OF DENTISTRY FOR NEGROES, we learn from a Chicago newspaper, has been established in Nashville, probably as a department of the Meharry Medical School. The Meharry School and Leonard Medical School, of Raleigh, N. Ca., are doing good work—better than the majority of medical schools for white people.

LEPROSY IN DAKOTA.—There is a case of leprosy at Harold, Hughes county, Dak. The subject is the child of Mrs. Bausum, who was a missionary to China when the child was born. The case was examined in New York a year ago and pronounced to be one of leprosy. The members of the afflicted family are allowed no communication with the neighbors.

POWER OF THE IMAGINATION.—DR. DURAND, wishing to test the effects of the imagination on health and disease, experimented on a hundred patients, to whom he gave a dose of sweetened water. Fifteen minutes after he entered, apparently in great excitement, and announced that he had made a mistake, having administered a powerful emetic, and he directed that preparations should be made accordingly. Eighty out of the hundred patients were thoroughly ill, and exhibited the usual results of an emetic.

ARCHIVES OF GYNÆCOLOGY.—Seven hundred and twenty-eight is the record in numbers of the articles printed during 1888 in the *Archives of Gynæcology* on the special subjects of its title. It is the aim of the editors to publish all current thought in these departments of medical knowledge. The publishers, Leonard & Co., 141 Broadway, New York, do not send sample copies, but if you are not pleased with the first number it may be returned and the order erased. Subscription \$3.00 per annum. Payment is not asked till end of the year.

THE CAUSE OF ILL-TEMPER has been discovered by a dress-reform lecturer, who does not consider it an evidence of bad disposition. She says that "oftener than not it is owing to bodily discomfort proceeding from improper dressing, and that wives would all be sweet-tempered if they were properly attired and took sufficient exercise." There is probably a good deal of truth in this. Improper and uncomfortable dress and indigestible food are sufficient to cause ill-temper; and if ill-temper be given the rein while food is taken indigestion will result sooner or later.

"ELECTRIC PROSTRATION" is the name given to a disorder which troubles workers under electric lights. Severe cases are reported from Creusot, France, where an electric furnace is used for quickly heating metals. The light exceeds 100,000 candle power, and the men suffer from it, not from the heat. After one or two hours the workers have a painful sensation in the throat, face, and temples, the skin becomes copper red, and an eye irritation begins that lasts forty-eight hours, the discharge of tears being copious. After five days the skin peels off. Dark-colored glasses somewhat mitigate the effects of this tremendous light, but not entirely.

CONSULTATION BY TELEGRAPH.—The Canadian Pacific Railway Company's telegraph was on Nov. 18 brought into service in a way that not only afforded a good illustration of the extent of the system, but furnished a unique example of the possibilities of modern science. Lord Ennismore, heir to the Earldom of Listowell, is lying at the point of death in the hospital at Victoria, B. C., with typhoid fever. Through the aid of Sir Donald A. Smith, who is now in London, a telegraph circuit was formed from London to Victoria by the Mackay-Bennett Cable and Canadian Pacific Railway telegraph, and Sir Andrew Clarke, the distinguished London physician, was placed in direct consultation with Dr. Hannington in Victoria. A conversation lasting three hours, concerning Lord Ennismore's condition, was carried on. An unbroken circuit was worked from Victoria to the cable office in New York, where the telegrams were repeated to London. Replies were received in three and four minutes.

HOMICULTURE.—A writer in the *Nineteenth Century*, taking the cue of the impulse to discuss human culture, makes some suggestions under the heading "Homicul-

ture." He believes a good deal could be done by directing public attention to the laws that underlie the improvement of stock. He also urges that before a marriage permit is allowed parties should be compelled to submit to a medical examination, to show that they are not laboring under hereditary diseases. Beyond this he would have the absolute prohibition of habitual criminals from propagating their kind. These suggestions have been to some degree urged before by Dugdale, but they are timely. No question is of more importance than the improvement of humanity. We have traced our ills to heredity. Our remedies must correspond. Probably all suggestions at present will be crude and premature, but it is nonsense to suppose an evil exists without a possible cure.

DIPHTHERIA CARRIED BY A TURKEY.—A fowl with diphtheria was brought to the house of a veterinary surgeon on April 24, and died on the 29th. The feeding and nursing of the bird devolved on a lad aged 14, who was assisted by his brother, aged 5. On the evening of May 11 the writer was called to see the little boy of 5, who had been poorly for a day or two. He had enlarged cervical glands on the left side, which had come on rapidly. He was a delicate little fellow, with fair hair and anemic aspect. The fauces were more or less covered with diphtheritic membrane, the left tonsil more especially. Under the administration of biniodide of mercury and iron the throat symptoms cleared up and the child made a good recovery. On the day after this case was first seen the boy who fed the fowl was very feverish and had similar patches over his fauces, but not to the same extent as his brother. A sister, aged 9, had also a similar explosion on the fauces. On the 18th the mother, who nursed them, was attacked and was similarly treated. They were all kept well up with beef-tea and stimulants.—*British Medical Journal*.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from November 10, 1888, to November 16, 1888.

By direction of the Secretary of War, the retirement from active service this date, by operation of law, of Col. Elisha I. Baily, Surgeon, under the provisions of the Act of Congress approved June 30, 1882, is announced. Col. Baily will repair to his home. Par. 1, S. O. 266, A. G. O., Washington, October 14, 1888.

By direction of the President, Lieut.-Col. Basil Norris and Major Henry R. Tilton, Surgeons U. S. A., are detailed as members of the Army Retiring Board appointed to meet at San Francisco, Cal., by War Department order dated October 27, 1888, published in S. O. 253, October 30, 1888, from Hdqrs. of the Army, vice Col. Elisha I. Baily, Surgeon, and Capt. John J. Cochran, Asst. Surgeon, hereby relieved. Par. 13, S. O. 261, A. G. O., Washington, November 8, 1888.

Major Ely McClellan, Surgeon, is relieved from duty at Jefferson Bks., Mo., and will report for duty at Chicago, Ill., as attending surgeon and as examiner of recruits. Par. 13, S. O. 261, A. G. O., Washington, November 8, 1888.

Major John H. Bartholf, Surgeon, is relieved from further duty in the Dept. of Texas, and will report to the commanding officer at Plattsburgh Bks., N. Y. Par. 15, S. O. 26, A. G. O., Washington, November 8, 1888. Asst. Surgeon W. H. Arthur, upon being relieved by Acting Asst. Surgeon J. L. Ord, will proceed to comply with par. 21, S. O. 250, c. s., Hdqrs. of the Army. Par. 5, S. O. 123, Hdqrs. Dept. of Ariz., Los Angeles, Cal., November 5, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 17, 1888.

P. A. Surgeon Robert Swan, ordered before Retiring Board 19th inst.

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ORIGINAL ARTICLES.

TRACHEOTOMY IN PSEUDO-MEMBRANOUS LARYNGITIS.

Read in the Section on Diseases of Children, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY CHARLES G. JENNINGS, M.D.,
OF DETROIT, MICH.

In the city of Detroit during the year ending May 31, 1887, there were recorded in the health department eighty-two deaths resulting from membranous croup, and thirty-eight deaths from diphtheritic croup, a total of 120 deaths from pseudo-membranous laryngitis.

A certain number of cases of pseudo-membranous laryngitis, classed as diphtheria cannot, of course, be included, and for this reason the number given is probably a little below the correct one. During this period, as learned from careful inquiry of the physicians of the city, there were not more than fifteen operations of tracheotomy and intubation performed for the relief of this disease. It will thus be seen that in that city, only one child in eight suffering from laryngeal stenosis, had given to it one of the only two therapeutic measures that would give it a chance for its life.

Although in some communities, operative interference in pseudo-membranous laryngitis may be more popular than in Detroit, it is probable that the figures from that city fairly represent the relative number of operations to cases of pseudo-membranous laryngitis in the large cities, while in the country the relative number is much lower.

Thus, in the year 1884, the mortality from croup alone, in twenty cities of the United States, with a population aggregating 7,051,000 was 2,819. Including the many deaths returned as diphtheria, diphtheritic laryngitis, etc., it will be seen that the annual mortality from pseudo-membranous laryngitis in the United States must be at least 6,000. So far as I learn, the latest published collection of statistics of tracheotomy and intubation performed in this country does not aggregate 2500 cases.

Operative interference, then, in pseudo-membranous laryngitis is not popular.

Considering the frequency of croup, its great mortality when left to medical treatment alone,

and the average percentage of recoveries after operation, there is no single operation in surgery that can save so many lives as tracheotomy, and it is difficult to understand why the profession is so slow to take it up.

Of the various objections to the operation, real and imaginary, which have been raised from time to time, and which evidently still hold sway over the minds of many practitioners, it is unnecessary for me to speak. They are familiar to you, and have been refuted by able writers, and the facts remain that pseudo-membranous laryngitis, when it has reached the stage demanding operative interference, is almost invariably fatal, and that tracheotomy or intubation can save from 20 to 50 per cent. of the cases operated upon. With such statistical evidence in its favor, arguments against operative interference in croup are powerless.

The objections to tracheotomy are no greater than the objections to many other surgical operations, and if applied to them would put an end to operative interference in all grave conditions. In the laryngeal surgery of the adult such objections have no weight, as we find in all diseases attended by laryngeal stenosis, tracheotomy is performed either as a palliative or curative measure. Even in carcinoma of the larynx, when nothing can be gained but a little prolongation of a miserable life, it is always performed.

I believe, then, that if croup were a disease of adult life instead of childhood, tracheotomy would be one of the most common operations in surgery. Children with this disease unable to demand relief, fall victims to the sentimental sympathy of their parents, or the hesitancy of their physicians. Too often it happens that the physician proposes the operation, the patients object, and, by his half-hearted advocacy, the physician encourages the objection. In my short experience I have seen this happen so many times that I have come to look upon it as the chief reason for the infrequent performance of the operation.

I fully realize the difficulties which surround the physician when he is urging operative interference. It is an emergency for which parents are rarely prepared and they instinctively reject it. The physician's duty is not done when he

simply proposes the operation and then takes this instinctive objection as final. To the grief-stricken parents, the average chances of recovery after either intubation or tracheotomy seems very small indeed, and hardly worth the trial, and it is our duty to show, by a frank and hopeful statement of the facts, the great value of the operation, and the earnest surgeon fully believing in this, but rarely will fail to overcome opposition.

Until the introduction of intubation by the remarkable labors of Dr. O'Dwyer, tracheotomy was the only surgical procedure for the relief of croup. The indication for the operation was the presence of laryngeal stenosis, and the physician had to determine only the degree of obstruction which made the operation imperative. Now, to him skilled in the performance of both operations, and confronted by dangerous laryngeal stenosis from croup, the question arises, shall intubation or tracheotomy be made?

The most recent systematic writer on croup, Dr. Geo. S. Gay, (Reference Handbook of the Medical Sciences, Article Croup,) says of the results of tracheotomy in America: "The statistics of results from the operative treatment of croup are very extensive, and those of late years, in America, are pretty uniform in their character. The formidable array given to the profession by the arduous labors of Mastin, Cohen, and many others, comprising over 11,000 cases as collated by Agnew, shows that from one-fourth to one-third of the cases of tracheotomized croup recover. Cohen's success has been remarkable. He reports 110 recoveries in 166 selected cases, most of them occurring in private practice. The experience of Jacobi, Cheever, Ripley, and many other American surgeons, while not as favorable as that of Cohen, is yet very satisfactory, about one-third of their cases terminating favorably." Dr. Gay adds his record of eighty six cases with twenty-nine recoveries, (33 per cent.), and the record of the Boston City Hospital 491 cases with 124 recoveries, (25 per cent.).¹

The most complete statistical record of intubation is that presented to the recent International Congress by Dr. F. E. Waxham, and gives 1,007 cases with 266 recoveries (26.07 per cent.).

From these figures it will be seen that the results up to the present time show intubation as a life-saving operation in croup to be inferior to tracheotomy. It is not improbable, however, that with fuller experience with intubation the instruments and the method of use may be so perfected as to give results equal to tracheotomy.

Some of the faults of the method are mechanical, and doubtless will be overcome; others I think are inherent to it and insurmountable.

The ease and rapidity with which intubation

can be performed, the ready consent that is usually given by parents, and the comparatively simple after-treatment, will continue to make it the favorite operation with many physicians. But leaving out of consideration these decided but sentimental advantages, and looking at the question only of the comparative life-saving power of the two operations, is it not possible that they can be made allies in the surgical therapeutics of croup? Is it not possible that in certain conditions, and in certain classes of cases each operation has special features that give it advantages over the other? In other words, can not the indications for tracheotomy be formulated anew, and with especial reference to its relation to intubation?

I shall not presume fully to indicate the distinct provinces of the two operations. Indeed, with our short experience with intubation, especially in its relation to tracheotomy, that is not possible; only the future accumulation of data will enable us to establish these points. I shall give simply the rules that I have framed for my own future guidance, and formed almost entirely from my own experience, and I offer them simply as a contribution to the settlement of the question.

My experience with the two operations is as follows:

To the time I commenced to perform intubation, about August 1, 1886, I had performed thirty-four tracheotomies with seventeen recoveries. Since then, I have made three primary operations, with one recovery, and five tracheotomies secondary to intubation with no recoveries.

To the present time, I have performed intubation nineteen times, with two recoveries. Two of the cases of intubation were infants 12 months old, and in the most unfavorable condition for operative interference. Three others were of such character that there was no hope of anything but temporary relief of the dyspnea; two of them were suffering with grave septic diphtheria, and one had croup secondary to grave scarlatina. The remaining 14 cases averaged about the same as those on which I have performed tracheotomy.

In determining the comparative life-saving value of intubation, the three last cases, and perhaps the whole five, could very properly be omitted, as I should not have performed tracheotomy upon them. I cannot agree with some writers, who hold that dangerous stenosis of the larynx is an indication for tracheotomy regardless of the general condition of the patient. It seems hardly justifiable to subject a child suffering from almost certainly fatal septic diphtheria, to the additional pain of tracheotomy, merely to prolong its life a few hours. The performance of such operations accomplishes nothing for the patient, and often does irreparable injury to the operation itself. Unless I can offer some hope of recovery, I do not advise tracheotomy.

¹ Since writing the above I have learned that Dr. Gay was mistaken in giving American surgeons the credit of such a large percentage of recoveries. Some of the statistics he quotes were taken from European as well as American sources.

From a glance of this series of sixty-one cases, it will be seen that the results with tracheotomy approach those that have been obtained by the most successful operators, while with intubation they are very low.

For the sentimental reasons before mentioned, I have persisted in the O'Dwyer operation, hoping, as I gained larger experience, to show the good results obtained by some other operators, but with my long continued unfortunate results I do not feel justified in giving it, in the future, the preference to tracheotomy. Therefore I have formulated the indications for tracheotomy in its relation to intubation thus:

Intubation may be given the preference over tracheotomy:

1. In infants under the age of 18 or 20 months.

In infants of this tender age the results of intubation have been very good, and considering the difficulty of operation, and readiness with which these young patients succumb to the shock of severe cutting operations, the milder operative procedure is to be preferred.

2. In all cases in which, from the character of the symptoms, and the progress of the case, it is presumable that the exudate is limited to the larynx and the upper part of the trachea. My two successful cases were of this character. Neither coughed up membrane after the introduction of the tube, or had any difficulty in breathing, and each expelled the tube in a fit of coughing—one on the third, and the other on the fourth day.

3. Whenever from the hopeless character of the disease there is nothing to expect but to give relief from dyspnoea, and to make death comparatively easy.

Tracheotomy is to be preferred:

1. Whenever the pseudo-membrane is extensive.

The pseudo-membrane, even when expelled immediately after operation, almost always reforms, and necessitates the use of solvent substances in the trachea, either by the spray or by instillation. After intubation, local medication of trachea is almost impossible, while after tracheotomy, with the diseased trachea in sight and within easy reach, it can be done with perfect ease. Further, the expulsion of membrane and mucus, especially in an exhausted child, is very difficult after intubation, and the attendant can give no assistance; after tracheotomy the reverse is the case.

2. When, for any reason the operation is delayed until the patient is exhausted and deeply cyanotic, or is moribund. To give such patients a chance for recovery the relief of the dyspnoea must be perfect and immediate. The irritability of the reflex centres is so obtunded, and the muscular debility is so great, that the child does not make efficient efforts to clear its trachea.

The trachea and large bronchi are filled with soft membrane and mucus, and for several hours after the circulation is relieved the deeply congested mucous membrane pours forth a great quantity of secretion. So far as my observation goes, these children die in a few hours after intubation, worn out by imperfect respiration, and their ineffectual efforts to keep their tubes clear.

Case 1.—Boy, aged $2\frac{1}{2}$ years. Moribund from severe dyspnoea of over twenty-four hours duration. Intubation 9 o'clock A.M. A little relief, but the tube filled up, and 11 o'clock A.M. the dyspnoea was again very severe. Tube removed and reinserted. No relief; death at 1 o'clock P.M.

Case 2.—Girl, aged 6 years. Moribund from eighteen hours of severe dyspnoea. Intubation at 1 o'clock P.M. A little relief, but all efforts failed to make the child clear the trachea. Tracheotomy at 2 o'clock P.M. with the O'Dwyer tube *in situ*. Expulsion of great mass of membrane and mucus with perfect resuscitation. Child died of pneumonia on the fourth day after the operation.

Case 3.—Child aged $2\frac{1}{2}$ years. No membrane in the pharynx. Grave dyspnoea commenced at 5 o'clock A.M. Cyanotic at 9 o'clock A.M. Intubation. Respiration was fairly easy, but the child did not rally perfectly. The pulse was very weak. The tube commenced to fill in an hour, the child could not clear it, and died asphyxiated at 2 o'clock P.M.

Case 4.—Child, aged 4 years. She had been cyanotic for several hours. Intubation at 6 o'clock P.M. There was great relief of the dyspnoea, but the trachea was never perfectly clear of membrane. She began to fill up during the night and died eighteen hours after the operation.

Case 5.—Girl, aged 8 years. No membrane visible in the pharynx, but there was a little bad smelling discharge from the nose. She was cyanotic when I saw her. Intubation at 3 o'clock P.M. Expulsion of a large mass of membrane and relief from dyspnoea. The trachea began to fill in a few hours, and she died during the night.

All of these cases were seen in consultation. They were very similar in that all of them were dying from asphyxia alone. In all the pharynx was clear, and one only, *Case 5*, showed any constitutional signs of diphtheria. The condition of *Case 3*, was the most desperate of all, and she was relieved by a secondary tracheotomy and lived four days. In a number of tracheotomies that I have performed under equally desperate circumstances, the operation has never failed to give complete relief, and some of the children have recovered. But one child in my series of primary tracheotomies died within forty-eight hours after the operation. In these urgent cases intubation may be performed as a preliminary

measure to give time to properly prepare for tracheotomy. The temporary relief will give time, also, for a deliberate operation. The internal tube should be left in place and extracted when the trachea is opened. It greatly facilitates the operation.

3. In all cases in which the constitutional condition of the patient makes medication and feeding by the stomach imperative. The well-known difficulty of properly nourishing children after intubation may seriously compromise the result when we have to do with the grave debility of diphtheria.

It will not be possible, always, to definitely place cases of croup into one or another of the above classes. Many times the physician will be in doubt as to which operation is to be preferred. In deciding he should be guided by his relative success with the two operations. He who can obtain the average good results of intubation may try it before resorting to tracheotomy. The surgeon who has 30 per cent. or more of his cases of tracheotomy recover, should in justice to his patient select that operation. The utility of tracheotomy after intubation has been performed, and has failed to give relief, is a subject upon which there has been but limited observation. Five cases have come under my care.

Case 1.—Girl, aged 6 years. No membrane in pharynx. Intubation on the evening of the third day of the dyspnoea. She passed a quiet night, but the breathing was continually somewhat embarrassed, and at times when the tube was partially filled with secretion the dyspnoea was quite severe. The next morning the child's temperature was $102\frac{1}{2}^{\circ}$ and the pulse was 120. She breathed hard, was unable to clear the trachea, and was commencing to show signs of exhaustion. At 10 o'clock A.M., the tube was removed and replaced. A large piece of membrane was dislodged, after which she breathed easier. In an hour or two, however, the trachea again filled. She struggled hard for several hours before I was summoned. I saw her at 7 o'clock P.M., and immediately made a tracheotomy. She was perfectly relieved, and breathed easily until her death from exhaustion twelve hours later. Dr. W. P. Northup in a review of this case ascribes the death to pneumonia. I did not suspect it at the time.

Case 2.—Oct. 17, 1886. Girl, aged 9 years. Intubation at 10 o'clock P.M. Relief for eighteen hours. The trachea then began rapidly to fill. Tracheotomy at 4 o'clock P.M.; complete relief. Death on the third day from extension of the membrane to the bronchi.

Case 3.—Detailed as *Case 2*, of the cases illustrative of the effects of very late intubation.

Case 4.—April 9, 1887. Boy aged $2\frac{1}{2}$ years. Intubation at 9 o'clock P.M. Relief for three days when the membrane began to extend and to fill

up the trachea. Tracheotomy on the fourth day. Complete relief, but death three days later from bronchial croup.

Case 5.—December 29, 1887. Girl aged 5 years. Intubation at 5 o'clock P.M. Complete relief. The tube filled the next day when it was removed and cleaned and replaced. This gave relief for a short time only. Tracheotomy on the second day. This operation gave but little relief and the child died in a few hours.

These five cases very well show the superiority of tracheotomy over intubation in combating the condition which gives rise to the dyspnoea in croup. Tracheotomy not only will relieve all cases that intubation can, but it will do more. In four of the five cases intubation had failed to keep the respiratory tract free, and if left without further interference all undoubtedly would have died in a few hours. Tracheotomy gave them chances of life far beyond the power of intubation to do.

From the observation of these cases I should advise the performance of tracheotomy when intubation has failed to give relief, if the secondary dyspnoea supervenes within a few hours. The first deposit of pseudo-membrane in the trachea is generally thin and pus-like, and but loosely attached to the mucous membrane. It is a *croupous* membrane in the *anatomical* sense. It is easily expelled after tracheotomy, and this operation certainly offers some chance of recovery.

If the secondary dyspnoea be delayed for two or three days, it is then usually due to the deposits in, as well as upon, the mucous membrane. The pseudo-membrane is thick, tough and firmly adherent to the mucous membrane—it is *anatomical* diphtheria. With such a membrane filling the trachea and extending into the bronchi further operative interference is of no avail.

The surgical treatment of croup is often made useless by injudicious medical treatment before the operation. Medical treatment, is to a certain extent at least useful, and and it would not be wise to entirely neglect it, but so few cases of pseudo-membranous laryngitis recover under it alone, that it is best to consider it of secondary importance. Upon operative treatment only should any reliance be placed, and the medical therapeutic of the disease should be selected with especial reference to it. If recovery takes place without operation, it should be looked upon rather as a fortunate accident, than an anticipated result. The most frequent error made, is in the too persistent use of emetics. They are often given until profound exhaustion is produced, and when the obtunded reflex centers refuse longer to act, they are stored up in the stomach, and when reaction takes place, produce violent gastro-intestinal irritation. Think of such a preparation for a capital operation upon the subject of a serious acute disease! With such preparatory treatment

what would be the result of other grave operations? Of late years it has been fashionable in some localities to administer large doses of calomel to croup patients—one or two drachms or more in twenty-four hours. These large doses have been given with the idea of promptly producing the constitutional effects of mercury. If this condition has a favorable influence upon the course of the disease, and the testimony of many able physicians and my own experience make it probable, it would appear more reasonable and scientific to administer a readily soluble salt of mercury, or frequent small doses of calomel, so that the physician can control the amount of the drug taken into the circulation, something that cannot be done when large doses of calomel are given. I have heard it asserted that this enormous dosage never produces salivation or other serious results. My experience has been just the opposite. Of four cases seen in consultation, and which had been treated in this manner, one died before time was given for the mercury to produce any effects; two died after tracheotomy had been performed, one partially and the other wholly, I believe, from the effect of the distressing salivation and the violent enteric catarrh; and one was suffering so greatly from the toxic effects of the drug that I refused to perform tracheotomy.

Apparently trivial details of operation and after-treatment so greatly affect prognosis, that to be successful in tracheotomy the physician should be a perfect master of them. During and after tracheotomy death threatens from every quarter, and the surgeon must make the best of the few conditions over which he has control. It is a great advantage to be able to select the time for operation and the best results are obtained from operations not too long delayed. Still, while a child is living it is never too late to operate. A skillful operator will open the trachea by deliberate dissection in six or seven minutes and when time presses in much less time, so that, so long as respiratory efforts are being made it will not be too late. The grave condition late in croup is generally the effect of asphyxia alone, and with the admission of air into the lungs, resuscitation usually is rapid.

It would unduly prolong this paper to give the details of tracheotomy; a few general remarks, however, may not be out of place.

The operation should be performed with the greatest delicacy and with all the deliberation the time will permit. The cut to the trachea should be made with as little tearing and mutilation of the tissues as possible. I find it can be made most carefully and quickly by avoiding almost entirely the use of a director or other instrument except the scalpel. With the child's neck over a small round pillow the tissues are so stretched that as the successive passes of the knife divide them, the edges of the wound automatically re-

tract. In the operation above the isthmus, the only tissues that cause trouble and delay are the veins, and the use of retractors or a director, or even the retraction of the edges of the wound with the fingers, empty them of blood and make them invisible. With successive gentle passes of the knife point, avoiding the veins, distended and in plain sight, as they present, the connective tissue lying next to the trachea can be quickly reached. Difficulty may be experienced here, as in this tissue lie imbedded dilated branches of the superior thyroid vein, branches of the superior thyroid artery and sometimes the crico-thyroid. The cutting through this dangerous layer of tissues must be very carefully done and it is often well to separate it partly by tearing. The method of Boze is very safe.

In opening the trachea I prefer to make a short cut in it, and before withdrawing the knife gently to introduce a slender retractor with a long beak, then to withdraw the knife, introduce another retractor, and to enlarge the incision either way with a probe-pointed knife. With the edges of the tracheal incision well separated by the retractors, respiration can go on while the operator is cleaning the trachea of mucus and membrane. There is usually no occasion for haste, and the canula can be carefully introduced when the trachea is clear. Many operators make the introduction of the tube the supreme moment of the operation, plunging it into the tracheal incision as soon as it is made, using the finger or some instrument as a guide. To this bungling method is due the inexcusable accidents of lodging the canula in the connective tissue alongside the trachea, and tearing the trachea, or its mucous membrane.

The canula should be so prepared as to cause the least irritation to the external wound, and the tracheal mucous membrane. This can be very well done by placing under the shoulder of the tube an apron of mackintosh cloth or oiled silk, and under that two or three layers of surgeon's lint or antiseptic gauze. This pad serves as a dressing to the wound, can be made fairly antiseptic, and protects it from the irritating contact of the metallic shoulder, and the secretion expelled from the tube. Another very important function it performs is to permit the easy play of the tube within the trachea during respiration, coughing and other efforts. The depth of the trachea from the skin varies much in different individuals, and as a result of inflammatory exudation. Variations in the thickness of this pad will give different lengths to the tube.

Pilcher, Cohen, Gay and other American writers have given to the profession such excellent articles upon the after-treatment of tracheotomy, that very little in addition can be said. The general indications to be filled, however, and the means at the physician's command to fill them,

cannot be too often repeated, as, in attention to these details above all others, lies the secret of success. After the operation the diseased mucous membrane of the trachea pours fourth a copious exudation of thick, tenacious mucus or pseudo-membrane. The inspired air quickly dries it and forms hard sticky masses that obstruct the newly made respiratory tract. These secretions must be kept fluid and the way clear for their expulsion. This is the chief indication in the after-treatment of tracheotomy. To accomplish it the essentials are:

To keep the apartment at a temperature of about 80° F., and the atmosphere loaded with moisture.

To administer remedies that are known to stimulate the tracheal and the bronchial mucous glands.

To keep over the tube a thick cravat of several folds of gauze or a piece of wet sponge, to further moisten and warm the in-going air.

To frequently change and clean the inner canula.

To use occasionally, in all cases, the steam-atomizer for twenty or thirty minutes at a time, and when the membrane forms fast and dries rapidly, to pour into the opening of the canula from one-half to three-fourths of the time a heavy steam spray of a mildly alkaline or solvent solution with the atomizer placed but a few inches from the canula.

Lastly, when, regardless of persistence in these measures, the trachea becomes obstructed, to remove the canula from the wound, and by instillation with a few drops of water, or with forceps, a feather or other instrument to search for and remove the obstructing mass, as would be necessary with any other foreign body.

Mr. Chairman, in bringing this very imperfect paper to a close, I wish to make a plea for more frequent operative interference in pseudo-membranous laryngitis. Whether it be intubation or tracheotomy that the physician may select is not a matter of importance so long as one is done. Without operative interference these children die, while with it a magnificent percentage recover. Every physician when confronted by a patient in the condition demanding tracheotomy, should have before his mind these eloquent words of Dr. Pilcher: "How long am I justified in deferring the application of a remedy which at once puts an end to grave sources of danger now present to my patient? The most approved methods of treatment have failed to arrest the course of the disease. There is a steady progression in its gravity. A possibility exists, however, that even at the last moment a favorable turn may take place and recovery follow. In all probability, nevertheless, it will steadily advance to a fatal termination. Shall I now give him the benefit of tracheotomy, with its unquestioned advantages,

or shall I wait yet longer? Each hour of waiting now will lessen rapidly the hopes which even tracheotomy affords. What is my duty to my patient? What other answer can there be than that *justice to my patient, justice to myself, fidelity to the profession I represent, all unite in demanding that now, early, before the development of conditions which will make any interference but a forlorn hope, tracheotomy should be done.*"

544 Jefferson Ave.

DOUBLE UTERUS AND VAGINA.

Read in the Section on Obstetrics at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, Ohio, May, 1888.

BY L. H. DUNNING, M.D.,
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Under the general title of double uterus and vagina I wish to consider the congenital malformations of the uterus described and classed by authors as uterus bipartitus, uterus unicornis, uterus bicornis, and uterus bilocularis, when one of these malformations is associated with a double vagina. My observation was directed to this subject something over a year ago, by having brought under my treatment a case of uterus bilocularis, associated with a double vagina. It was a case specifically described by Kussmaul under the name of uterus septus, vagina septa. Brief notes of my case are as follows:

Mrs. A., aged 37 years, married some months and never pregnant. Came to my office with her husband to consult me on account of something abnormal they had found about the genital organs. The following facts were elicited, viz.: Menstruation had begun when the patient was quite young, but had always been irregular and generally scanty. During the last two years they had been at times painful. Since marriage pregnancy had not occurred, but coition had not been painful and there were no symptoms pointing to serious uterine trouble.

Upon ocular inspection and digital examination the external genital organs were found normal and well developed. Upon separating the labia and looking into the *ostium vaginae* nothing abnormal would have been noticed upon casual examination. Upon close examination two vaginae were found, separated by a moderately thick septum extending from a groove between two cervixes to the introitus vagina. The right vagina was considerably larger than the left, and was undoubtedly the one used in coition. The finger entered this one readily, while the left one needed to be searched for. A cervix was found in each vagina and were normal in all respects except the left one was smaller, and both were shorter than normal. The probe entered the right uterine cavity 2 inches, and the left one 1½ inches. The points of the probe could not be made to meet and their

handles diverged slightly. No communication between the uterine cavities or vaginal pouches could be made out. By conjoined manipulation the uterus was found to be of normal size, except that the transverse of the body was greater, and there was a slight depression at the fundus, marking the division of the body of the uterus. That portion lying to the left of the depression was one-third smaller than that upon the right side.

About one month later the husband came to my office reporting that his wife had not had her menses, and that they thought her pregnant. Three months later she was seen by the writer and pregnancy found to exist. The labiæ and vaginæ had grown considerably, and were now of that livid hue sometimes indicative of pregnancy. The cervixes had enlarged and softened and the right side of the uterus had enlarged, so that it, with its contents, was as large as a normal pregnant uterus at the fourth month. The left side of the uterus had not correspondingly developed, it being apparently flattened out and lying like a molehill upon the left side of the impregnated uterus.

From this time on I saw the patient frequently, and became thoroughly convinced she would be able to effect delivery without operative interference. In due season labor came on in a normal manner. When I was called it had advanced well into the first stage. The right os was dilated to the size of a silver dollar, while the left one was nearly as large. The bag of waters protruded from the right os, and the foetal head was felt just within it. In another hour the right os was largely dilated with a large bag of water protruding from it. The left os was also large and I could determine the position of the foetal head through it as well as through its neighbor. It was found during this examination that there was a communication between the two sides half an inch above the internal os. The finger could be passed into one os through this opening and out the other os. The uterine septum had been torn and it was thought strongly probable that the head would tear the vaginal septum before it in its descent. This actually occurred. The second stage of labor was of four hours' duration and the pains were only moderately severe. At the vaginal outlet a band of the septum remained and was stretched antero-posteriorly over the centre of the foetal head and for a brief time retarded labor. By pushing the head back in the absence of pain this band could be pushed toward the left side, but not far enough to allow the passage of the head. Finally, after three or four pains, the band suddenly gave way, and the head was as suddenly born. The remainder of the child quickly followed, as also did the placenta. There was but little hæmorrhage or shock and the patient was at the end of labor in an excellent general condition. Strict antiseptic precautions were observed and at the end of two

weeks the patient had made a complete recovery.

When this case came under the writer's observation he began looking up the literature of the subject of double vagina and uterus, and found that contained in one language very meagre, and hardly satisfactory to one desiring to obtain a comprehensive knowledge of the subject. Todd's "Cyclopædia of Anatomy and Physiology" gives a brief but excellent anatomical description of congenital malformations of the uterus, but has little to say regarding double vagina. In the following works much valuable information may be found, viz.: Lusk's "Midwifery," Hart and Barbour's "Manual of Gynæcology," Fritsch's "Diseases of Women," Barnes' "Diseases of Women," and in Turner's articles in the *Edinburgh Medical Journal*, Feb., 1865, and May, 1866. The writer of this article has, by the invaluable aid of a physician having access to the Library of the Surgeon-General's office, collated and tabulated the histories of 97 cases of double uterus and vagina. Brief references to some of the facts thereby obtained may be of some interest. Before proceeding to this part of our subject a short anatomical description of the various forms of the malformations will not be inappropriate. Todd divides congenital malformations of the uterus into four groups.

1st. Uterus Bipartitus.—In this group the ducts of Müller are imperfectly developed, or undeveloped, and the result is a more or less complete absence of the uterus. The examples of complete absence of the uterus reported are believed by Todd to be cases in which the rudiments exist, sometimes with a fold of peritoneum lying behind the bladder. The concomitants of this condition are usually rudimentary ovaries and Fallopian tubes, a short vaginal cul-de-sac, a complete absence of the vagina, or in rare cases a complete vaginal pouch. In rare instances the ovaries will be found normal, and in still rarer instances there will be a pervious os communicating with the vagina, and the uterus, Fallopian tubes and ovaries sufficiently well developed to permit of conception and delivery. The presence of normal ovaries concomitant to rudimentary condition of the uterus may be understood when it is remembered that the "ovary is formed out of a separate portion of blastema of that from which the Wolffian bodies and excretive duct of the genitive apparatus are developed," so that the failure of growth of one does not necessarily involve a corresponding defect in the other. In this class is the greatest deviation from the normal development of the uterus.

2d. Uterus Unicornis, or the single-horned uterus, is the next in the order of the greatest departure from the normal in development. Here one uterine cornu retains the imperfect condition, while the other undergoes development, so that

* Todd's Cyclopædia of Anatomy and Physiology, vol. v, p. 678.

the uterus will consist of a developed and an undeveloped half, or there may be an entire absence of one cornu. Where a rudimentary horn is found this is then solid, or hollow, closely connected to its fellow or only joined to it by a pedicle, which may be either pervious or impervious. The ovary upon the side of the rudimentary horn may be absent, undeveloped, or normal. The Fallopian tube may be pervious or impervious. When the ovary is absent or imperfectly developed it is not unusual to find an absence of the kidney upon the corresponding side. In this group the vagina may be double or single. If it be double one side is likely to be rudimentary or much smaller than its fellow.

3d. *Uterus Bicornis, or Two-horned Uterus.*—This form of malformation is more frequently met with than either of the former ones. Here the uterine cornua generally develop symmetrically, yet with an imperfect junction of their lateral borders. There is in this class no evidence of plurality or duplicity of the uterus. The condition is due to defective development or failure to fuse of the lower extremities of the ducts of Müller, and a consequent conjunction of the two halves, as occurs in a normally developed organ. In some instances in this group there is no fusion whatever and there would appear to be two separate organs, and yet examination shows in every instance but a single ovary tube and round ligament for each horn, and thus is demonstrated the fact that the malformation is due to defective development, rather than to a duplicity of organs.

The uterus duplex bicornis and uterus didelphy's are subdivisions of this group, and they differ from each other chiefly in the degree of the separation of the cornua. In the latter the separation is complete, so that each cornu is capable of movement independently of the other. In this group, as a concomitant, the vagina may be single or double, as also may be the cervix and os. A rudimentary condition of one horn may exist.

4th. *Uterus Bilocularis.*—The slightest deviation from the normal will be found in this group. Here the uterine cornua are partially fused and may be equally or unequally developed. Usually a groove or fissure will mark the separation of the cornua, while the cavity is more or less completely separated into two parts by a septum. The vagina is also frequently divided into two parts by a septum. When this occurs there may be a cervix in each vaginal tube, or the septum may divide a single os into two parts. The writer's case was of this group, and in it the septum extended from the os vagina to the fundus of the uterus. Of the 97 cases the histories of which the writer has collected there were found examples of each one of the groups described. They were as follows:

Of uterus bipartitus	2 cases.
" unicornis	3 "

Of uterus bicornis	52 cases.
" bilocularis	23 "
Uterus single, os, neck and vagina double	2 "
Unclassified, except as double	15 "

Of these cases the vagina was double, *i.e.*, divided into two parts, in 77 instances; single in 5; absent in 1; and not stated, but probably double, in 16; and there was atresia of one vagina in 6 cases. Some interesting and instructive facts relative to pregnancy were obtained. Of the 97 women having the malformation, 47 were married, and those who bore children whose marriages were questioned were 3, thus making in all 50 possible mothers. Of these, 42 women were pregnant 76 times. There were 42 natural deliveries, and 13 difficult labors. The means of relief in the difficult labors were forceps in 7; turned in 1; septum of the vagina cut in 4; and in 1 there was rupture of the uterus. The number of deaths at, or as a result of labor, was 4; 1 of convulsions; 1 of rupture of the uterus; 1 cause not stated; and 1 of puerperal fever three weeks after delivery. Fourteen women miscarried 18 times.

It is interesting to know which one of the varieties of malformation we have described is most liable to become pregnant and what is the result in each case. Is the one-horned uterus less liable to become pregnant than the uterus separatus, and if pregnant is it more liable to result in miscarriage, or is labor more liable to be difficult or disastrous? In our list no instance of a pregnant uterus bipartitus is found. Pregnancy occurred in uterus unicornis in 3 women; in uterus bicornis in 21 women; in 12 women having uterus bilocularis; in 4 in which the uterus was single, but vagina double; and in 2 of unclassified form. Of the cases of artificial delivery 6 occurred in uterus bicornis; 2 in uterus bilocularis; and 1 unclassified form.

These facts are what we would be led to expect when we remember the peculiarities of each class. The one-horned uterus is equally surrounded by muscular tissue, and will nearly or quite right its position in the pelvis before the end of the period of gestation. In uterus bicornis the deficiency in muscular tissue upon the inner aspect of the organ, or inability to rightly employ that tissue, either or both tend to make labor more difficult or protracted. There are two factors operative in removing the axis of the plane of the uterus from the axis of the plane of the vagina, *viz.*: The commissure (Todd) frequently placed between the separated horns of the uterus, the position and thickness of which determining the angle at which the diverging horns will meet in the grooved uterus, the action of the round ligament which being attached to one horn only of the uterus tends to keep it well outward in the process of development.

But what influence do the different forms of malformation have upon the ability of the preg-

nant woman to carry the fœtus to full term? Our data is not sufficient to enable us to settle this question beyond controversy, yet the facts we find are quite suggestive.

Of the uterus duplex bicornis there were 6 pregnancies and 1 miscarriage; of the uterus bicornis, 5 pregnancies and 1 miscarriage; of uterus didelphys, 10 pregnancies and 5 miscarriages; of uterus bilocularis, 12 pregnancies and 6 miscarriages; of uterus unicornis, 3 pregnancies and no miscarriages. The large percentage of miscarriages in uterus bilocularis is due quite largely to the lodgment of the ovum in the decidua vera in the superior posterior portion of the uterine cavity near enough the septum so that as the placenta develops it spreads over upon the septum and hæmorrhage, or failure of growth frequently occurs, and miscarriage follows. The reason of the frequent abortions or miscarriages in uterus didelphys will, I believe, be found (a) in the unfavorable position the impregnated uterus gradually assumes as the period advances, which position interferes with its circulation, and (b) in the sympathetic excitement induced by the menstruation of its fellow.

What are the effects of the abnormalities under discussion upon menstruation? Menstruation is a function requiring for its normal performance a complex system of organs which must be perfectly formed, in perfect working order, and each bearing its proper relations to all others. Here we have abnormalities affecting a part or the whole of the organs of the menstrual system, and the abnormalities are those of development. The organs affected are chiefly the uterus and vagina, for it is not common to find errors in the formation of the ovaries in cases of double uterus and vagina even in the highest types of the malformation, for reasons already stated. To be more specific, there must be, in order to perfect menstruation, a normal ovary, a pervious tube, normal uterine mucosa, and a pervious os and vaginal tube. These are not always present and when they are not menstrual disturbances will arise.

The most disastrous of these disturbances we have found in our studies are hæmatomatra; the menstrual fluid being retained in the uterus in consequence of an impervious os, and hæmatocolpus resulting from atresia of one vagina. The former of these most frequently occurs in cases of uterus bicornis, but it is sometimes met with in a rudimentary horn which contains normal uterine mucosa and no communication between the developed and undeveloped horn. We found records of many cases in which menstruation was irregular, scanty, or painful, and some striking anomalies, some few of which may be mentioned. In one instance the patient gave birth to twins at six months from one uterus, menstruated regularly from it three times and then gave birth to a perfectly formed child from the other uterus. In

another instance menstruation occurred from both uteri and both became pregnant. Abortion occurred, and it was then ascertained that one uterus had been impregnated three months while the other only one month. It was also learned that both uteri may menstruate at the same time, or that they may alternate in the performance of the function. These facts all tend to emphasize the importance of the place the uterus occupies in the system of organs involved in the performance of the function of menstruation. If with a single uterus and two ovaries menstruation occurs normally every four weeks, and if with a double uterus, each half having a single ovary, the menstrual flow occurs from each every four weeks it would seem quite conclusive evidence that the uterus, and not the ovary, is the most important part of the menstrual system and, it would too, the writer thinks, tend to prove the cyclic nature of this functional manifestation, with the uterus as the center of the system.

What effect does the duplex condition of the vagina have upon the mature woman in respect to menstruation, married life, pregnancy, and delivery? Upon these points our text-books have little to say, but the writer has found in his investigations this is one of the most important parts of his study. Atresia of one or both vaginæ will lead to the formation of a hæmotocolpus. The suffering attending this pathological condition is great, while the dangers to life incident to operative procedures for its cure are also great. The subjects of duplex vagina are usually ignorant of its existence until after marriage, when they find coition painful or impossible. Occasionally a physician will be confronted during the progress of a difficult labor by the presence in the vagina of a firm septum, or he will recognize the existence of a double vagina in which there is a thick, firm, fleshy septum. In the list of cases we have studied (97 in all) we have found the septum described as complete, *i. e.*, extending from the os uteri vagina to the cervix uteri, in 72 instances. The following facts appear respecting the septum, *viz.*: The septum delayed labor in 2 cases, was cut away during labor in 3 cases, torn away in labor in 5, divided before labor in 1, divided for painful coition in 6, for relief of diseased conditions in 4, sloughed away after delivery in 1, and was divided for atresia of the vagina in 6 cases. In one of the patients having vaginal atresia of one side the fœtus passed into the occluded vagina and had to be removed by incision.

It will be seen by this statement that the septum was an important factor in labor in 13 patients, or in more than one-third the women who were confined, as in only 36 of the child-bearing women was there a vaginal septum. It is pertinent to inquire what shall be our mode of procedure respecting this septum? If seen before pregnancy in the married woman it should be, if thick, firm

and unyielding, incised, excised, or severed by the galvano cautery. As a rule, the writer believes, it will be the best surgery to excise the septum and suture the edges of the mucous membrane, in order to avoid as nearly as possible resulting cicatricial tissue in the vagina. If an incision alone is used it should be crucial, in order that the incised surfaces may not come in contact and adhere. Should the patient be not seen until after pregnancy has occurred the operative procedure is best delayed until the fourth or fifth month.

There is nothing to contraindicate the severing of the septum during labor if it be found materially retarding labor. It is better to cut the septum than to allow it to be torn away as it was in the writer's case. Fortunately his inactivity did not entail upon his patient disaster or serious results, but he would not again hazard the risk of such an occurrence. The best operative means for the relief of hæmotocolpus has not yet been decided upon. Emmet boldly advocates free incision, immediate evacuation of the retained fluid and antiseptic irrigation of the cavity. The weight of authority seems to be against this method and in favor of puncturing the tumor and slowly draining off the retained fluid. Of the 3 cases in our list all were punctured; one died, one recovered, and in one the result is not stated, though it probably recovered. Similar results are shown in the three cases of hæmatomatra in the list. The writer has in his possession the histories of 20 cases of hæmatomatra treated by various methods and cannot forebear anticipating his paper by stating that by far the highest rate of recoveries is found in those instances in which a free incision was made and free drainage and irrigation employed.

Our conclusions are

1. Congenital malformations of the uterus and vagina are of more frequent occurrence than the experience of one man would lead him to suppose.

2. Of the forms of malformation of the uterus associated with double vagina the uterus bicornis is the most frequent, 51.5 per cent. belonging to this class.

3. Except in uterus bipartitus the fecundity of the woman having the malformation is not materially diminished.

4. The ratio of difficult labors is greater than in those having normal uteri. 24.1 per cent. were difficult labors; 28.5 per cent. being of uterus bicornis, and 16.66 per cent. being of uterus bilocularis.

5. The forms of malformation in which abortion or miscarriage is most liable are uterus didelphys and uterus bilocularis. In these 50 per cent. of the cases so resulted.

6. Both sides of the uterus may be pregnant at the same time and the foetus in each in the same stage or different stages of development.

7. Disordered menstruation is of frequent occurrence. Atresia of one vagina will be found in about 8 per cent. of the cases. Stenosis of the cervix uteri is sometimes present.

8. Menstruation will take place if there be even a small amount of uterine mucosa and a normal ovary, and if there be not a free exit of the menstrual fluid hæmatomatra will result.

9. Menstruation may occur simultaneously from both uteri or they may alternate in the performance of this function. In the latter case it may appear every two weeks, and from alternate sides.

10. The two preceding conclusions show the important part the uterus plays in the performance of this function of female life.

SOME OBSERVATIONS, AFTER 1,000 OPERATIONS FOR HÆMORRHOIDS.

Read in the Section on Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

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Having for a number of years given special attention to diseases of the rectum, I have thought that this paper could be made more or less interesting by recording my individual experience in the operations looking to the relief of hæmorrhoids. I have based my conclusions from operations done upon patients taken indiscriminately from hospital, dispensary, and private practice. Believing that an individual experience is worth much in forming an estimate, I give mine for what it is worth.

Internal Hæmorrhoids.—This I believe to be the most common of all rectal affections, though Mr. Allingham believes fistula in ano to be. In making this estimate I rule out the diagnoses made by patients, who usually pronounce any and all affections of the rectum or anus to be piles.

Causes.—With deference to our French *confrères*, I am satisfied that constipation is the chiefest among the causes of hæmorrhoids. Nor can I subscribe to the belief that through the dissections made by Verneuil we find sufficient evidence in the peculiar distribution of the veins, and the course they take in the coats of the rectum, to disprove the theory that constipation, sedentary occupations, drastic purgatives, prolonged use of enemata, etc., can institute true hæmorrhoids. His idea that the superior hæmorrhoidal veins pass through "veritables boutonnières musculaires," and that these muscular button-holes have the power of contracting and causing such stasis and congestion in the superior hæmorrhoidal veins as to cause the "primum mobile" in the formation of internal piles, I do not believe. Upon this theory was dilatation of the two sphincter muscles suggested as a cure for internal hæmor-

rhoids. Whatever might have been its success in France, I am sure it has failed of its object in America. This failure I attribute to the unscientific basis upon which it was practiced. In a word, then, I believe hæmorrhoids to be veritable tumors, in the formation of which the arteries as well as the veins play a part. The mucous membrane of the rectum being movable, is everted at stool. Anything that impedes the return of blood will congest the part. This, sufficiently kept up, ends in the plastic deposit of inflammation constituting the material for the formation of piles. I quite agree with Verneuil, that the superior hæmorrhoidal veins are connected with the portal system, and in the main form internal hæmorrhoids, and that external piles are formed from the external and middle hæmorrhoidal which are not connected with the portal venous system, and hence the two venous systems, portal and general, are practically distinct at this point. This proposition is admitted, and yet we cannot admit the absolute separation of the portal and general venous systems. I have been thus explicit on this point from the fact that confusion has arisen over it.

Sex.—In my experience men are the oftenest affected with piles. This I account for on the basis that the portal circulation is in the male oftenest interfered with. This will outweigh the fact that childbearing and displacements of the uterus are pregnant causes of piles in females.

Age.—A number of authors cite cases of piles in infants. I have never witnessed the affection in children under 10 years of age. Old age is mentioned as most favorable to the disease. This has not been my observation. Old people frequently mention that during adult life they were so affected, but as the years grew apace, the piles disappeared. It is eminently a disease of middle life.

Classification.—The usual classification of piles is mystifying, to say the least. No anatomical difference can be drawn between the so-called venous and the arterial pile, and the commonly designated "capillary" pile frequently uncovers an artery of good calibre. The terms external and internal are quite sufficient for all practical purposes as applied to piles, for, as Mr. Erichsen says, "all internal piles should be tied, and all external piles should be cut off."

Dangers.—The only real danger from internal piles is hæmorrhage, and this can scarcely apply to any save the small incipient pile. The friction to which larger tumors are subjected causes such thickening of the mucous coat that bleeding, as a rule, is impossible. Sometimes large hæmorrhoids prolapse and slough, hence require surgical interference, but this could only occur from an indiscretion.

Operations. Injections of Hæmorrhoids.—For a number of years the injecting of hæmorrhoids

with carbolic acid seemed to be a favorite plan with many in the profession. Being a discovery of the itinerants, it soon found favor with the laity, more because of its secrecy than from any merit. After the remedy was exposed, the profession was able to give it a fair trial. Many, for a while, were inclined to look upon it with much favor, for the reason especially that it was easily practiced. After a few reported accidents, thoughtful men began the real study of the subject, the *modus operandi* of cure. After a sufficient length of time had elapsed for investigation, I took occasion to record my objections in an article read before the Kentucky Medical Society in 1878. In that paper the position was taken that the injecting of piles with carbolic acid was a dangerous procedure; that by the plan much inflammation was excited; the pain in the majority of cases very great and prolonged; that dangerous hæmorrhage was to be feared; that sloughing was the rule, hence ulceration, stricture, etc., might follow; that death might occur from hæmorrhage, embolism, or septic trouble; and that in no case could a radical cure be pronounced. After an elapse of ten years we find these predictions verified. Dr. Andrews, in his late work on "Diseases of the Rectum," p. 24, says: "The following accidents have been reported to us out of about 3,304 cases: Deaths, 13; embolism of liver, 8; sudden and dangerous prostration, 1; abscess of liver, 1; dangerous hæmorrhage, 10; permanent impotence, 1; stricture, 2; violent pain, 83; carbolic acid poisoning, 1; severe inflammation, 10; sloughing and other accidents, 35." Of course this was an indiscriminate collection and the half was not told. The quacks would not confess their bad results, hence most of this table was from accidents and results so plain that the profession ascertained them. Allingham reports thousands of cases by ligature without an untoward symptom and no death. Others are of the same good report. Kelsey, of New York, who a few years ago was inclined to advocate the injection plan, discountenances it now. Ball, of Dublin, who has just issued an admirable work on diseases of the rectum, only says in mention of it that the plan has been tried in America, but with poor success. The writer begs to say that what was said by him in 1878 he reaffirms in 1888. The remedy came in unawares, has been weighed in scientific scales and been found wanting. No authority to-day advocates its use.

Dilatation.—As has been suggested, after the views of Verneuil were promulgated, it was advised that dilatation of the sphincters be practiced for the cure of all internal piles. Such men as Gosselin, Dubrueil, Durch and others endorsed these views. The plan has been tried extensively in France and, the reports would indicate, with a moderate degree of success. In America it has proven a failure. The theory was wrong, hence the success bad. In the

early formation of piles, I have no doubt but that good could be accomplished by the plan, but after a pile is well formed I am sure it could not be cured by any such procedure.

Excision.—It is a little surprising to hear Allingham say that he regards excision as one of our best operations for internal piles. I think that an author should consider the audience he is addressing; and surely this sentence could result in much harm. To the surgeon accustomed to handling the rectum, the danger might not appear so great, yet to the many that might try this operation it would be fraught with much danger. It certainly can never become a popular method. I have had the internes try it at my hospital clinics, and in each case great difficulty was experienced in controlling hæmorrhage.

The Clamp and Cautery.—This is generally known as Mr. Henry Smith's operation. It finds great favor in the hands of Dr. Kelsey, of New York. It occurs to me that after a surgeon has had a certain amount of success with any given operation in surgery, he is loth to give it up. This certainly must apply to Mr. Smith, who is a great advocate of the clamp and cautery for the cure of internal piles. That this operation, compared to others, is cumbersome, cannot be gainsaid. That it is attended with much danger must be admitted. Any clamp is but a temporary safeguard, and if a break is made in the seared edges of the wound, bleeding must of necessity take place, and we all recognize the great danger of hæmorrhage into the rectum after an operation has been completed. The method has found but little favor in this country, and I am satisfied that, by comparison with the ligature, it will fall into disuse.

The Ligature.—Certainly, of all known methods, the ligature stands preëminent as an operation for internal hæmorrhoids. It has stood the test of years in the hands of the most eminent surgeons. To-day it is the most popular method. Easy of execution, free of danger, and rapid in its results, it can but command the attention of all who are interested in this operation. To the principle involved in the use of the ligature all are agreed, but the method of application is to a certain degree disputed. The method, as practiced by Mr. Allingham, is to dissect the hæmorrhoidal tumor away from its attachments, and then to surround the remainder, at its base, with a tight silk ligature. For the first few years in special practice I did the operation after this plan. I then modified it for the following reasons: 1. It was misleading to teach students after this fashion, because there was much danger in their dividing the artery which supplied the tumor. 2. There was more cutting than is necessary.

The modification consisted in running a delicate knife around the base of the pile, simply going through the integument. This saves any deep

cut and at the same time removes all superfluous skin, or external piles. Indeed, there are many cases of internal hæmorrhoids which require no cutting at all. This point is not sufficiently brought out in the books. I allude to the large internal piles which have no complication as mentioned here, viz.: superfluous flesh, or external piles. These require only to be brought in sight, ligated and returned into the bowel. Much stress is laid upon the degree of tightness that should be accorded the ligature; some saying apply it loosely, others advising it to be drawn tightly. I am sure that the tighter a ligature is drawn the quicker and more effectual will be the cure. A point is made in suggesting the kind of material to be used in the ligature. Many prefer silk. I am in the habit of using the stoutest linen thread, such as is used by saddlers or shoemakers. The twist of the silk, or other material, I am sure has nothing to do with it, as some seem to think it has. The kind of knot to be tied is spoken of, Mr. Allingham remarking that he ties the knot *three* times. Twice is quite sufficient, and the surgical knot has no advantages over the common hard knot. All internal piles existing should be ligated at the same sitting, and all returned into the rectum. The greatest care should be taken in cutting off the tumors after ligating. It is much best to leave the whole mass, rather than to have one ligature slip after returning the tumors into the bowel. The presence of the mass in the gut cannot result in any harm; the ligature is between it and the circulation. As a rule, then, it should not be cut off. A number who have written upon this subject say that the bowels should be confined for from five to seven days, and a light liquid diet enjoined. Certainly this is a mistake, for two reasons: 1. In this length of time the fæces will become hardened and impacted. 2. These patients generally require all the nourishment they can get. When following this advice I have had as much or more trouble result from impaction than from the original operation. My habit is to purge the patient the day of the operation, and to give an aperient on the second day after the operation, and each succeeding day thereafter until the patient is discharged. Consequently a full diet is prescribed if required. When operating under an anæsthetic I always divulse the sphincters, more especially if any cutting is done. This prevents the contracting of the muscles, hence obviates much pain when inflamed.

Anæsthetics.—It is often asked if the operation for internal hæmorrhoids can be done without the use of anæsthetics. If the sphincter must be divulsed because of the complication of fissure, ulceration, or what not; or if any cutting is to be done, then an anæsthetic is absolutely necessary. If internal hæmorrhoids exist without any such complication, and protrude well in response to the

bearing-down effort, then an anæsthetic is *not* necessary. It is often suggested that cocaine could be used with benefit in these operations. In the removal of external piles much benefit is derived from throwing the solution under the growth. In the operation for internal piles I have found it of little value.

Antiseptics.—Unfortunately, strict antisepsis cannot be practiced in these operations. Fortunately, it is not as necessary as when operating elsewhere. I am in the habit, however, in all these operations, of having strict surgical cleanliness as regards both the person and instruments. If any cutting is done the parts are dusted freely with iodoform, and the gauze of the same applied over the wound.

Results.—As the caption of this paper intimates, I have operated about one thousand times for hæmorrhoids by the ligature. I have never had to operate the second time upon the same patient for the affection. Have never had an unnatural contraction around the anus as the result of the operation, nor had ulceration or stricture to result. I have had in this time one case of tetanus, which I believe to have been superinduced by a debauch, the patient having been drunk for several days before the operation. The tumors protruded, strangulated and mortified, hence the operation. He recovered from the tetanus under the bromide treatment. Have had one case of secondary hæmorrhage occurring on the third day. The rectum was plugged and the bleeding stopped. Also one dangerous case of hæmorrhage which occurred one hour after operation was done, in consequence of the slipping of the ligature, the pile having been cut off. The patient was pulseless and cold when seen, but the artery was quickly secured and tied, and he made a good recovery. I have never had a single death result from the operation, and but few untoward symptoms.

INSANITY; SOME POINTS OF MEDICO-LEGAL INTEREST.

Read before the Session on Medical Jurisprudence at the Thirtieth Annual Meeting of the American Medical Association, at Cincinnati, May 9, 1888.

BY PHILIP ZENNER, A.M., M.D.,

OF CINCINNATI, LECTURER ON DISEASES OF THE NERVOUS SYSTEM IN THE MEDICAL COLLEGE OF OHIO.

The present status of Medical Jurisprudence is far from satisfactory, especially the position of the alienist physician in the courts of justice. His testimony often seems to be of little value. His opinion as to the nature of insanity and degrees of responsibility is often not admitted by the court. The medical jurisprudence of insanity will probably never be on an altogether satisfactory basis, until a due knowledge and appropriate feelings on the part of the community, lead to the enactment of proper measures in the

management of all defective classes, of which the insane is but a part.

Discussions of the subject in this organization, though it has no legislative power, may be productive of good because of the influence of a large body of scientific men, especially physicians, in making public sentiment.

The position of an expert on insanity before a jury, is exceedingly unsatisfactory to himself, and reflects but little credit upon him before the community. Conflicting evidence, expert testimony, equally emphatic on opposite sides, or undecided and conflicting on both sides, is the public spectacle usually presented. The radical fault is not that the testimony is naturally *ex parte* testimony, nor that those called upon to testify have frequently no special knowledge of insanity, though these are grave difficulties, but that the expert, however competent, personally has not the opportunity of making such observations as may assure a positive diagnosis. The important truth is not generally appreciated that special attainments are often equally or more necessary in order to know how and what observations to make as to judge from those observations what is the true diagnosis. In obscure cases untrained observers could not be relied upon to find hidden symptoms, more than they would be to point out the diagnostic tests in obscure cases of internal disease. The hypothetical cases put by the advocate are often worse than useless; but the brief personal examination often permitted to the physician may be equally misleading. There is but one satisfactory mode of arriving at a safe diagnosis in criminal cases, where the mental status is very obscure or doubtful. The individual should be held for a length of time, the duration varying according to the necessities of the case, in an asylum or other suitable institution, where he could be under constant and competent observation. But in order that such observations be reliable, the physicians in charge should be men of special attainments, an end that might be gained through their selection by representative medical bodies, rather than through political influence.

Another great difficulty in the medical jurisprudence of insanity, is the question of the proper test of the responsibility of the insane. There is a marked difference in the views of psychiatrists and those of the judiciary, the latter largely reflecting the sentiments of the community at large. The dictum of the court, that the proper test is the ability to distinguish right and wrong, cannot be accepted by experienced psychiatrists. Many of the insane have clear ideas on most subjects, and know full well what the world deems right and wrong, but, nevertheless, because they are dominated by delusions, or under the influence of powerful impulses, or merely on account of their perverted views and

perverted lives, should be judged differently from those of sound mind and dealt with more leniently. This view of the psychiatrist would save the family the odium of crime, but it especially arises from consideration for the insane subject himself. Compassion for human affliction as much as the sense of justice, prompts us to hold an individual irresponsible for his acts. The community at large entertains such feelings toward those who are in such an obtunded or confused mental state as to be practically bereft of intelligence. The psychiatrist, with his more intimate knowledge of insanity and active sympathy arising therefrom, entertains similar feelings towards all those whom mental disease has robbed of the ordinary modes of feeling, thinking, and acting, or who have not, in ordinary parlance, free will. I believe that most psychiatrists would agree that the legal test of responsibility should be the answer to the question, is the subject sane or insane. Such a test would be more readily acceptable if, at the same time that it settled the question of the legal responsibility of the individual, it did not therewith virtually dismiss him from further control, as is practically the case at present. On the contrary, such an insane subject should be completely at the disposal of the court. Matters of discipline, as well as the protection of society demand this. The knowledge of immunity may foster crime among the insane as well as those of a sound mind, while due punishment tends to restrain it. But a special aim must be to protect society from the acts of such irresponsible persons. The ill will with which the community views condoning the acts of the criminal insane, is doubtless partly due to the fear that society may suffer again at the hands of the same individuals, and too often the verdict "insane" virtually sets such people free in society. I could mention an instance of this kind in which I was unfortunately the means of having the prisoner pronounced insane. I say unfortunately, because, from prudential considerations, it would have been much better that the individual should be in the penitentiary than allowed full freedom. Such difficulties could be avoided and proper measures in each case be instituted if, when a verdict of insanity were rendered, the disposal of the case would be left to the discretion of the court. The latter, with the assistance of proper medical counsel, should then order the patient to be retained in an asylum temporarily or permanently, or even inflict degrees of punishment, according to the nature and circumstances of the case.

Questions of insanity in court, indeed, the whole subject of the disposal of the insane, would become a much simpler matter if proper views were held, and proper measures taken, as to the treatment of all defective classes. A large part of the defective class is composed of crim-

inals, at least a large part of the crime class is naturally defective. Their history shows this. It is only in recent years that the mental status of criminals has been made the subject of special study, and more philosophical views entertained as to the nature of crime. In many instances they are found to be possessed of impaired nervous systems and abnormal mental traits. The anatomical investigations of this subject are yet in their infancy. The view that there is a certain type of criminal brain must be looked on as chimerical. But various anatomical defects, or abnormal configurations of the skull have not infrequently been found, conditions which seem to ally such brains with those of degenerative forms of insanity, especially paranoia. Of more value are the clinical studies of the crime class. A valuable contribution to this subject has recently been made by Dr. Robinson,¹ physician to the Eastern State Penitentiary of Pennsylvania. His observations are to the effect that a large percentage of such individuals belongs to families of criminals, in which, at the same time, insanity or other nervous diseases are found, and that the criminals themselves present various abnormalities about the skull, are often the subjects of nervous diseases, and are already, or become, insane. In perpetrating criminal acts, they often are merely acting according to the depraved instincts of their nature rather than from necessity or greed. Such facts indicate the presence of abnormal nervous systems, or that the individuals belong to the defective classes of society. This must be accepted as true not of all, but of a large part of the crime class, and its general recognition is important, because it would tend to create the proper feelings toward this class and lead to their suitable treatment. The insane were formerly believed to be possessed of evil spirits, and subjected to scourging and other brutal treatment. When it became known that they were the subjects of disease, they began to be treated with the care and leniency due to human affliction, with the result of ameliorating their condition and assisting their restoration to health, thereby benefiting society at large, as well as adding incalculably to the well being of the afflicted. Similarly a correct idea of the crime class should lead to changes in their manner of treatment to the benefit of both themselves and society. The satisfaction of revengeful feelings, the idea of punishment, traces of a barbarous age, are still, to a large extent, elements in the treatment of crime. There should be but two considerations in its treatment, the protection of society, and the improvement of the criminal. The more nearly these ends are accomplished the more nearly perfect are the methods of treatment. But the present method of disposal of criminals does not tend to the accomplishment of these ends.

¹ Journal of Nervous and Mental Diseases, vol. xiv, page 231.

The criminal is for a short time secluded, and to that extent society is protected, but this period of seclusion is comparatively short, and when he is again free, he is usually more dangerous to society than before his punishment. His character is hardened. He is morally worse. Therefore, both the criminal and society are injured by his temporary punishment. A special injury from that punishment must not be over-looked. Many crimes are the result of passionate impulse or great temptation, while their perpetrators are not persons of criminal character. There is no reason why such individuals might not again become good citizens, but their future life is ruined, and they may even be driven to crime, on account of their subsequent reception by society. When their period of punishment is over the reputation of the prison clings to them, and deprives them of the common opportunities of making an honest and honorable livelihood.

What remedy can be suggested for the removal of the evil effects of the present treatment of crime? The method of treatment I have to propose, while it can only be vaguely outlined, points out, in my opinion, the direction in which changes should be made. First, I believe the guiding principle in treatment should be this, that punishment must be adjusted, not to the crime, but to the criminal, to the character of the individual, rather than to his deeds. As far as possible criminals should be divided into two classes. The first comprises those in whom the criminal act is an outgrowth, not of character, but of circumstances, the result of great temptations, blinding passion, etc. If such a distinction was clearly made, the members of this class would probably be received with such a degree of trust by society that their future need not be altogether wrecked. Probably they would carry with them only the reputation attached to their acts, and not an additional prison taint. As this class has no constitutional tendency to vice, there would not be the danger of their breeding the criminal class, nor any special future danger from themselves.

The second class includes those of criminal character. They are, and always will be, a danger to society. In addition to this, as they breed their own kind they are constantly adding to the crime class. From these ills, the danger from the criminals themselves, and the multiplication of the crime class, society should be, as far as possible, protected. Such criminals should be permanently secluded, but inasmuch as they belong to the naturally defective classes, and therefore are deserving of commiseration, their seclusion should be the least possibly painful, consistent with our great aims, protection of society, diminution of the crime class, and their own support. The best means to accomplish these ends must be learned from experience,

especially from the wise observations of those conversant with penology. That many difficulties must arise in their application, the oft times difficulty of distinguishing the class to which the criminal belongs, the fact that the two classes merge into one another, and that a large number of criminals cannot be properly arrayed with either of them, need not in any way affect the great principles involved, or interfere with their practical application. Many adjustments would be necessary which would naturally grow out of experience.

A CASE OF NECROSIS OF THE MASTOID CELLS AND THE ENTIRE LABYRINTH OF THE OTHER SIDE, WITH PARALYSIS OF THE FACIAL NERVE,

FOLLOWED BY PARTIAL RECOVERY OF HEARING.

Read at the Congress of Otology, Brussels, September 10, 1888.

BY LAURENCE TURNBULL, M.D., PH.G.,
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In most of the cases of purulent disease of the ear extending from the middle ear to the brain, the upper bony wall (roof) of the tympanic cavity is the part usually affected, and by this route the disease is carried direct to the cerebrum or cerebellum; transmission may also occur through the blood-vessels and other sources. Another and more rare method of tissue conveyance of ear disease to the brain, is by way of the labyrinth through the inner wall of the tympanum and round window. The base of the stapes again, with its delicate ligaments, forms the only septum between the tympanum and vestibule, and when suppuration takes place in the labyrinth, the disease advances through the cribriform floor of the internal auditory meatus to the auditory nerve, and thence to the base of the brain and medulla oblongata. In other cases, purulent matter is formed beneath the arachnoid, over the whole surface of the brain, or an abscess may develop between the arachnoid, the pia mater, or by pressure in the brain substance. In some rare cases the disease extends a considerable distance down the medulla spinalis.

When destruction of the bone has extended in the direction of the posterior cranial fossa, abscesses form in the cerebellum.

In the case we are about to relate the whole labyrinth became necrosed.

Mary T., æt. 9 years, a girl with dark eyes and hair, of delicate constitution, was admitted for otorrhœa as an outdoor patient of the Jefferson Medical College Hospital, July, 1882. The disease succeeded a severe attack of scarlet fever in the early part of the year. After recovery fistulous openings showed themselves over the upper part of the mastoid cells of the right side. These

openings were enlarged and a mass of dead bone removed under antiseptic treatment.¹

The opening healed under careful treatment, nourishing diet, and alteratives of bark and iodide of iron. She absented herself without consultation, and nothing was heard of her until December, 1886, when she returned with a profuse left-sided otorrhœa, facial paralysis, and deafness. From the mother's account she had suffered from an attack of diphtheria, with inflammation of the middle ear with extension, evidently, into the labyrinth, also involving the facial nerve (within the Fallopian canal), with loss of sight, hearing and locomotion. This attack terminated, not in death, as is the usual result, but in an extensive abscess involving the middle ear and side of the face, accompanied with profuse bloody discharges, the lumen of the auditory canal being filled with a mass of polypoid granulations. The girl was admitted into the hospital, and the following operation performed.

She was etherized, and by means of Wilde's modified snare the entire polypoid mass was removed. This was followed by a profuse discharge of dark venous blood, which was checked by syringing with ice-water, and then the meatus was packed with tannic acid, camphor and iodoform. After this operation she was kept in bed for a few days until she recovered from its effects.

On December 3 she was again put under the influence of ether, and on introducing a probe it was found that the external auditory (bony) meatus and temporal bone of the left ear were necrosed; there was also ulceration and sloughing of the whole cartilaginous canal. A strong pair of bone forceps were carefully introduced, and considerable force employed so as to bring the diseased portion of bone to the surface; but it was not considered safe to remove it at that time. It was so large it was feared it would lacerate and injure the parts.

She was again taken to the ward, after stopping the flow of blood with antiseptic cotton. The resident physician of the hospital was directed to keep the parts well packed, using powdered boric acid with absorbent cotton; and for the removal of any offensive odor to use a solution of permanganate of potassium. After ten days of this treatment, the dead bone became so loose that it was removed through the enlarged meatus without pain or any symptoms of cerebral disturbance.

The patient was kept in the ward for six weeks, until all discharge had ceased. She was then placed upon large doses of iodide of potassium and tonics, strychnia, etc., with the use of the galvanic battery for the facial paralysis. She became well and strong, able to talk more plainly, and to use her feet and limbs. She could hear loud conversation in the right ear, but there was no improvement in the facial paralysis, nor diminution of the deafness in the left ear.

After her discharge, the mother was given a card to Dr. G. Betton Massey, a distinguished electro-therapeutist, who treated her for some time, but without much benefit, for the paralysis. Time has restored in part the connection of the nerve. Such cases as this have been reported by Dr. Friedrich Bezold² and others.

Description of the Specimen.—From the density of structure, weight, and shape of the portion of bone removed, we felt convinced that it was almost the whole of the petrous portion of the temporal bone. This opinion was confirmed by a more careful examination and section by Dr. Morris Longstreth, pathologist to the hospital. The following is his report:

Report on Sequestrum from the Ear.—The sequestrum, embracing the whole labyrinth and Fallopian canal, measures in its long axis nearly an inch ($\frac{1}{8}$ inch), and its transverse measurement on section surface is slightly over half an inch ($\frac{1}{2}$ inch). It weighs 36 grs. Its surface is rough, jagged, and eroded by the necrotic process, except at one portion posterior to the internal meatus, which appears dense, white and smooth, like the inner skull surface covered by the dura mater; on this part is a shallow furrow like those provided for the folds of this membrane, or for a blood-vessel or sinus. The opposite surface shows above the "fenestra ovalis" and below it the "fenestra rotunda," the latter opening broken and irregular.

The fragment of bone is penetrated by several foramina—one large one towards the tapering end, and two smaller ones near the same end, but on the opposite aspect; these two are the entrance and exit of a canal (referred to before) through the bone tissue. A section through the long axis of the fragment, which on the cut surface shows itself to be very dense, reveals a half dozen cells, excavations which intercommunicate and are connected with the external foramina already spoken of.

In the interior was found the vestibule with its fossæ, the cochlea, modiolus and lamina spiralis, with the semicircular canals broken off near their junction with the vestibule.

May 5, 1888. The present condition of the patient is as follows: She is in perfect health, well and strong, being able to hear a twenty inch watch one inch on the right side, the right being the ear from which the portion of necrosed mastoid was removed.

There has been no discharge from either ear since the removal of the diseased bone. The C-3 tuning-fork was heard (felt) in the air in front of both ears, but as a musical sound heard only in the right ear. Her articulation is at times more or less imperfect, but she is able to talk, and repeat the German alphabet and give all the letters their proper sound. She attends a German school

¹ See author's "Clinical Manual of Diseases of the Ear," p. 361, 1887.

² "Necrosis of the Labyrinth and Paralysis of the Facial Nerve." Archives of Otology, vol. xvi, No. 4.

with hearing children. The facial paralysis remains the same. The experiment of Valsalva is felt in both ears.

The meatus from which the sequestrum of the left labyrinth was removed is twice the size of the normal, and cicatricial tissue is seen on its sides. In the other there is a small narrow meatus with a cicatricial pseudo-membrana tympani.

This is a remarkable case, in that, after the most severe symptoms involving the brain, accompanied with paralysis of the face, arms, limbs, and total deafness on one side, and such a copious discharge from the ears, there should be recovery to such an extent that the patient has no otorrhœa, is able to hear and converse, and so take her place at home without having to be sent to an asylum.

The specimens, photograph and cuts were presented to members of the Section for inspection.

M. HARTMAN, of Berlin, has treated a case of necrosis, with exfoliation of the labyrinth, and although the tuning-fork was heard on that side, the patient was deaf to the sound of the voice.

M. POLITZER gave an analogous case, that of M. Burkhardt-Merian at the Congress of Bâle, which seemed to indicate that the sound could be directly perceived by the acoustic nerve.

DR. BARR, of Glasgow, showed the sequestration of the osseous labyrinth of a child ten years of age, attacked after several years of otorrhœa, following scarlatina. The patient had a facial paralysis, but was not affected with dizziness, although the semicircular canals were eliminated.

M. GELÉE: I ask my confrères if they think anyone can hear without ears, or if it would not be better to suppose that these eliminated sequestrations did not comprise the entire ear. For my part I prefer to believe that there is yet a portion of the labyrinth which perceives the sound of the tuning-fork rather than to suppose that the facts exist contrary to physiology.

THE THERAPEUTIC ACTION OF SOME OF THE MINERAL WATERS OF THE UNITED STATES UPON MA- LARIAL DISEASES; WITH RULES FOR THEIR USE.

Read before the American Climatological Association at the Congress of American Physicians and Surgeons, Sept. 19, 1888.

BY W. C. VAN BIBBER, M.D.,
OF BALTIMORE, MD.

The effect of bad air upon the human system is shown in various ways, the differences depending upon the particular kind of air which causes the diseased conditions. Salubrious situations on the earth are known and recognized mainly from certain characteristics of the human inhabitants. It is true that other air breathing animals are in-

juriously affected by bad air, but this comparative study is not within the scope of the present paper.

Many of the changes in health, and grades in constitution produced by climate upon man are well known, and those peculiarities of disease existing in the inhabitants of different atmospheric planes have not escaped observation. The practicing physician and climatologist will do well to study the effects of hills and mountains upon the human organism, for they exercise influences not to be accounted for by the chemical analysis of the air. By far the greatest number, as well as the most serious diseases, produced by the quality of the air alone, are found to originate in the lower strata of the air, that is, at an elevation but little above the level of the sea. It is true most of the inhabitants of the earth live in these lower strata, because most of the great cities of the world are built upon navigable waters, and the most fertile lands are found in alluvial formations.

It is believed that the plane of the atmosphere three hundred and fifty feet above tide water is for the most part free from that mysterious something which produces ague and fever. A few noteworthy exceptions may be found to this law, but the planes of the atmosphere, from the tide level, to a height of ten thousand feet, have already been studied as to the production of certain diseases, and to the curing of others, and the work is still going on. This is one of the chief problems of the science of Climatology; and one result of these observations shows that certain symptoms and individual appearances, accompanied by constant pathological changes, are found with us, only as a rule, upon the ocean slopes and large river bottoms, and seem to be identified with this particular atmospheric plane.

To state the matter more precisely, we may say that, if a thousand men should be selected and taken from our sea-board swamps and river bottoms, below the thirtieth parallel of latitude, and placed side by side with a thousand men selected from a plane of the atmosphere over three hundred and fifty feet above tide water, north of the 30th parallel of latitude, the one set of men, can be distinguished from the other set, by the practicing physician, both whilst the men are living, as well as by an examination of the organs of the cadavers. Again, it is believed, that, should the men from the hills and those from the swamps change abodes for a few years, corresponding changes would take place in their physical peculiarities and outward appearance. These peculiar individual changes are wrought in a gradual manner by time, and, until recently, it seemed to be by an undetected hand; yet the changes are none the less certain and well marked.

It is the changes which will take place in the thousand men transferred from the hills to the swamps which will now engage our attention.

These changes steal along in the human system, for a time possibly without noticeable manifestation; until finally, a culmination takes place, and a chill, a fever and a sweat ensue in their proper courses. Then what was latent before soon becomes active, and the marked individual appearances begin to manifest themselves. These are externally, a sallow and stretched skin, muddy colored conjunctivæ, dry hair, dry and brittle nails, emaciation, a stooped curved and shrunken figure, and a slow crumbling of the teeth. The peculiar sensations or feelings which accompany these external appearances, are a gradual loss of strength and vigor, a desire to recline and rest, torpor of mind as well as of body. As mental effects we notice loss of ambition, indecision, procrastination, superstition, a craving for stimulants, with a continuous belief in "biliousness." These symptoms come on slowly and may continue for years without relief, because they seldom, or never, of themselves produce death, though their effects are serious and far-reaching; and, as will be seen hereafter, the three largest and most important organs of the body are so altered in texture and function, that there is, comparatively speaking, but little of the physiological man left. It is no wonder therefore that there should exist under these circumstances a predisposition to pneumonia or other fatal affections. So that, when from some intercurrent disease or from accident, death does ensue, the liver is found enlarged, generally softened, but sometimes indurated, and always changed in color, being filled with a black substance called "pigment." The spleen is likewise enlarged, softened and changed in color. The marrow of the bones is also altered in color and consistence; and a peculiar crescent shaped micro-organism has been found in, and around the red blood corpuscles, which is thus described, in a letter to me by Surgeon George H. Sternberg, U. S. A. He says:

"In response to your questions I would say that the parasite discovered by Laveran in the blood of malarial fever patients presents itself in various forms. Some in the interior of the red corpuscles, amœboid and segmenting forms, and some free in the serum, crescentic and flagellate forms. That these forms represent different stages in the life-history of the same micro-organism is inferred from the fact that pigment granules are found in all of them, and also from their association in the blood of malarial fever patients and from the fact that they have not been observed under other circumstances.

These facts also give strong support to the view, that the parasite in question bears an etiological relation to malarial manifestations. The rapid destruction of red corpuscles during a malarial paroxysm, and the accumulation of dark pigment granules derived from the blood especially in the liver and spleen as the result of re-

peated attacks, is quite in accord with the observations of Laveran, Richard, Marchiafava Celli, Golgi, Councilman, Osler, and others relating to this interesting hæmatozoon."

The disease now under consideration, was anciently called malaria because it was universally believed to be due to unwholesome air. At present there is a question whether it comes into the system from the air, or through the water, in those situations where it is found; but there can be no question as to the identity of the affection; and this is the disease which will be considered in this paper.

It is surely a high office for the physician to study additional means of relief for those piteous sufferers from this terrible malady, and no more useful aim can engage the attention of this Society than to unite, in its collected wisdom, during this discussion, in an endeavor to ameliorate such suffering as is familiar to you all. The most important advance in this direction, was the introduction into Europe of the cinchona bark about the middle of the seventeenth century, and its properties as a febrifuge were soon widely recognized. Numerous theories have been advanced as to the mode of operation of this remarkable remedy, and still the problem remains unsolved; perhaps only to find a solution when we shall thoroughly understand the diseased conditions for the relief of which it is employed. The three things which we may take as definitely settled, are that the "Jesuits' powder" is beneficial in these fevers, that it does not always cure them; and that we neither know why it succeeds nor why it fails. The immense number now suffering from both the acute and chronic forms of this kind of malaria, notwithstanding the most liberal use of the specific remedy, is sufficient to prove conclusively that it has not an absolutely curative effect by itself.

The purpose of this paper is to suggest certain supplementary or auxiliary remedial agents in the treatment of these diseases; and these are found among the mineral waters of the United States. For more than eighty years the waters of the Greenbrier White Sulphur Springs, in Greenbrier County, Virginia, have had a high reputation for the cure of malarial diseases. The situation of the spring is in a beautiful mountain valley, twelve hundred feet above tide level. The medicinal virtue of the water is supposed to reside both in its solid and gaseous contents. Bad cases of the kind of malaria which has been described, are to be found visiting this spring every summer for the benefit of its water; and a large proportion of these patients come from the cotton and rice plantations of the sea-board; some from the valley of the Mississippi river and its tributaries; and others from the valleys of the rivers which empty into the Gulf of Mexico. I first visited this spring as a physician in 1851.

Since that time I have had opportunities to study and observe the effect of this water upon the kind of malaria which has been described; and my observations have led me to adopt a regular system for its use.

The plans of cure which I shall recommend have been tested upon many patients and with generally good results. It often happens that those wishing to be benefited cannot remain at the spring longer than from two to four weeks; and to suit this necessity, the plans have been called the two and the four weeks plans.

That for two weeks consists in drinking as much of the water, early in the morning, as is necessary to sensibly affect both the bowels and the kidneys—enough to give one or two loose watery movements from the bowels, and a free discharge from the kidneys. For this purpose an average person will require from two to four glasses of the water early in the morning. These should be taken whilst the patient is in active exercise in the open air, and two hours should elapse after drinking the last glass of water before taking breakfast. At noon take a warm bath of the sulphur water, temperature 94° to 98° F. and remain in the bath from fifteen to twenty minutes. Whilst in the bath drink two or three glasses of the sulphur water. The time of the bath should be arranged so as to have dinner or lunch soon after leaving it; say about two o'clock, which is the usual dinner hour at the hotel. After this drink two glasses of the water at five o'clock P.M.; and two before retiring at night. Wash in the sulphur water morning and night; and exercise freely during the day by walking in the mountains. This two weeks systematic course has such a decided alterative action that few persons can safely carry it further than the time specified.

In the four weeks course the bath is ordered every *other* day, and the amount of the water to be taken may be proportionately moderated. The four weeks course should always be preferred when time can be given for this purpose. The object of this treatment is to produce a continuous acceleration in the action of both bowels and kidneys, and to increase the activity of the skin. These three objects are undoubtedly accomplished, and during the active course of treatment a good indication of its future success is found in the increased vigor and improved appetite; elevation of spirits, with a feeling of lightness of the body, and buoyancy of the mind, which are most agreeable. One of the peculiarities of this water when drank pure from the fountain, is to elevate the spirits with a sensation not unlike that produced by champagne. It causes a slight feeling of dizziness and an excitement of the brain. It may be this which gives a charm to the place, and a lustre to the ball-room which is not seen elsewhere. But it should always be used with refer-

ence to individual idiosyncrasies, either pure from the fountain, or "staled" by the evaporation of its gas according to the valuable rules given by Dr. J. J. Mooreman, who was for more than thirty-five years the resident physician there.

The other springs, with the waters of which I have had nearly as long an experience in chronic malarial troubles, are the Saratoga Springs, in Saratoga County, New York. There are now more than twenty-one springs opened at this famous place, each one of which has a different chemical analysis. My observations have been more particularly confined to the Congress, the Hathorn, the Hambleton and Washington Springs as drinking waters, and to the Putnam, the White Sulphur, and the Red Springs as bathing and washing waters. From these I have made up a definite course of treatment, which I advise for two weeks and four weeks, similar to the courses already given for the Greenbriar White Sulphur water, and which, I think, has many advantages.

During the first week of the two weeks course, as much of the water of the Congress Spring should be taken, early in the morning, combined with active exercise, as will produce a decided effect upon the bowels and kidneys. An average person will require from two to four glasses of this water, and the last glass should be taken about an hour and a half before taking breakfast. During the second week of this course the Hathorn Spring should be used. Take each day at noon a bath of the Putnam or White Sulphur water, at a temperature of 94° to 98°F., and remain in the bath from fifteen to twenty minutes, drinking whilst in the bath, one or two pints of the Hambleton Spring water. At 5 P.M. take a wineglassful of the Washington Spring water, not more; and at 6 and 10 P.M. take one or two glasses from the Congress or Hathorn Springs. Wash night and morning in the water of the Red Spring.

This gives a definite course of treatment, the object of which is to produce an alterative effect, and to rapidly change the molecular structure of the body. Few individuals can continue such a course of these waters for a longer period than two weeks. In the four weeks course, which is always to be preferred if it is possible, the bath is to be taken every other day and the amount of the waters taken each day to be proportionately diminished.

In this course of treatment, by the water of either of these springs, the activities of the body are increased in every department, the bowels, kidneys, skin, liver, stomach, mind and spirits are all safely and agreeably stimulated. It is a full occupation of his time for a patient to undergo this treatment. To most persons it is a delight to experience the sensations resulting from it. The entire body seems to be renewed, the patient feels confident that the change will be last-

ing. It is a safe treatment; it is systematized and may be changed to suit individual cases. If this system is carried out it may be of service in preventing that blind bathing and drinking which our physicians find so injurious at all the springs in this country and which is in strong contrast with the practice at similar health resorts in Europe.

Having pointed out two springs which are salutary in malarial troubles, and having given those rules for the use of their waters which I have found most beneficial, I might here let the subject rest; but the disease of which we are treating is such a remarkable one, its literature is so large, its prevalence so widespread, its theories so interesting, that I trust I may be permitted, in closing, to say a few words concerning the *modus operandi*, or the manner by which the beneficial effects of the proposed system are produced.

Until about eight years ago everything concerning the cause of intermittent or remittent fever was obscure, and everything concerning the manner of its cure was a matter of theory and conjecture. Now a step has been taken in advance which will increase the interest attached to its treatment. Students in Europe; at the Johns Hopkins University; in Philadelphia, and elsewhere in this country, have made public the results of study and experiment, which bring the whole subject into a new phase; replace fancies by facts, and introduce a new method of treatment. To bring this out clearly, I will place side by side the two explanations of the manner of cure, in order to contrast the old teaching with the new:

The old explanation.—"By the use of the waters as advised, all the outlets of the body have been opened, and in this way the diseased particles have been removed. What particular path they took to get out of the system is a matter of conjecture; but the result of the treatment is sufficient to prove the fact that they were eliminated by some means or other."

The new demonstration would read in this way:—"The hæmatozoon which controls the disease has been found, and a study of its movements will alone reveal the truth. The number of red blood-corpuscles which have been damaged in any particular case can be told by actual count; and the restoration of healthy red blood-corpuscles can be determined in the same way. Under certain favorable circumstances the healthy red blood-corpuscles are rapidly formed, and when they are sufficiently abundant and vigorous, they dominate the system, resisting both the reception and encroachments of the disease. Those globules that were formed at the two springs, both of which are situated at elevations above the usual melanæmic line, were produced under different and favorable circumstances of air, food and water. If, during a certain system of treatment, the blood

be rapidly brought from a condition of disease to one of comparative health, we may legitimately infer that those globules which have been formed in the progress of the treatment, are of a healthy character; and if we were able before, to detect special vitiation in the red corpuscles, we may expect to find special improvement in these. And this is precisely the result which follows the treatment I am recommending."

Without entering into technical detail, I think what has been said represents the present state of our knowledge concerning paludal malaria. The plans which have been advised for its adjuvant treatment, I can recommend to you after an ample experience, and if they should be sanctioned by your reason and used in your practice, I cannot doubt that the benefits will at least be equal to what I have mentioned as the result of my own experience.

MEDICAL PROGRESS.

EFFECT OF LANOLIN ON MICRO-ORGANISMS.—The results of GOTTSTEIN'S experiments on this subject are thus given in the *Deutsche Med. Zeitung*, Berlin: 1. The bacteria which effect a spontaneous decomposition of glycerine fats belong presumably to the class of anaërobes; a number of aërobe germs (even the putrefactive) perish on a medium containing fat. But the term of continuance of this retrogressive metamorphosis is decided by the proportion of fat to the other ingredients of the nutritive medium. 2. Free fat contains anaërobes for some days after it is exposed; but lanolin has under similar circumstances neither aërobe nor anaërobe germs. 3. Glycerine fats may be so impregnated with bacteria that the latter can pass through the fat to the lower-lying infectible substances, while lanolin cannot be permeated by bacteria. It acts, therefore, as a preventive of decomposition when laid over infectible substances.—*British Medical Journal*, Nov. 10, 1888.

A DIAGNOSTIC SIGN OF NEPHRITIS.—GEISLER says that the elimination of iodide of potassium by the kidneys may be used as a diagnostic sign of nephritis. While the quantity of albumin increases with the accentuation of the lesions of the glomeruli of the kidneys, the rapidity of elimination of iodide of potassium remains normal. But it is diminished as the lesion of the canaliculi of the kidneys becomes more advanced. This is true in both the chronic and acute forms of nephritis.—*Vratch*, No. 27, 1888.

TARTRATE OF THALLIN INJECTIONS are recommended for gonorrhœa, in 1:50 and 1:100 naphthol solutions. Use three injections of one-half or one-third a syringe-ful daily.

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SATURDAY, DECEMBER 1, 1888.

THE NUMBER AND VARIETY OF MEDICAL SOCIETIES.

In THE JOURNAL for November 24, 1888, we made some suggestions in answer to the question, whether the formation and support of so many American associations of medical specialists was not tending to the disintegration and final destruction of the American Medical Association as the great representative organization of the profession in this country? While we then freely expressed our conviction that no fears need be entertained of such a result in the future, and candidly admitted that such National specialist organizations were affording a useful field for some members of the profession to work in, who would not work in any other, another and perhaps more important question demands more attention than it has yet received. Are there any evils arising, or likely to arise, from the organization of an unlimited number and variety of medical societies, each acting independently of all the others?

If, as is the fact, we have in each of the larger cities from six to ten independent medical societies, and in each State not only one general State medical society but several State societies of specialists, and then several societies receiving members from parts of several States, does it not almost necessarily tend to so far divide the time and work of the working members of the profession as to impair the efficiency and influence of the whole? No member of the profession engaged in active practice, can well afford to attend and

sustain properly more than one local medical society meeting weekly or semi-monthly; one State society meeting annually or semi-annually; and one National society meeting annually in different parts of the country.

If he divides his time with a larger number of societies, he lessens the amount that he can give any one; or if he tries to contribute something to a larger number he either presents the results of his work so hastily and imperfectly prepared as to be of little value, or he reads substantially the same paper to three or four different medical societies as an original contribution to each. One of the most important defects in the contributions to medical societies in this country is, incompleteness, arising from insufficient time and attention given to their preparations. But those who advocate the organization of as many independent medical societies, local, State, and National, as there are special departments of the science and art of medicine, evidently overlook one of the fundamental and important objects to be gained by professional society organizations. This object is, to bring those representing all classes and interests in the profession *together* at stated intervals, that by personal acquaintance, friendly intercourse, and mutual interchange of knowledge, personal and sectional prejudices should be removed, the common-stock of professional knowledge and skill increased and more widely diffused, and the unity and power of the profession as a whole greatly strengthened. Instead of fostering this fundamental object, the organization of an independent society, local, State and National, for every *specialty* in medicine, only tends to keep the cultivators of each isolated from the others; or if any attempt is made to obviate this by bringing representatives of all these together once in three or five years, it still leaves the great body of educated and faithful general practitioners out of recognition, and directly makes the line of distinction between the specialist and practitioner more plain, and more rapidly develops into full maturity the class distinctions of specialists, consultants and general practitioners with their inevitable jealousies and bickerings.

On the other hand, with one general medical society in each city, county and State, with one National society constituted of representatives from all these, and in each of which the practitioners of every department of the healing art

can meet on a common platform; and yet within the regulations of each, Sections sufficient to accommodate the more detailed work of every legitimate specialty; we would have the most complete professional organization possible; combining all the inspiration, homogeneity and power derived from unity, with every advantage for detailed scientific work in the several Sections, that could be afforded by any number of separate specialist organizations. We wish every intelligent, earnest worker in our profession would give more thought to this subject. If in "union and harmony there is strength," it logically follows that in segregation and discord there is weakness.

RHEUMATISMAL METATARSAL OSTEO-PERIOSTITIS.

The apparently unrecognized, or but little recognized disease of infantrymen, is written of in an interesting article in the *Revue Générale de Clinique et de Théraputique*, of October 25, by CH. ELOY. It may be considered as an œdema localized at the head of the two or three metatarsal bones of the centre of the foot, with an accompanying osteo-periostitis. The cases on record number 20, 8 having been reported by Pauzat in 1887, 11 by Poulet 1888, and one by Eloy. Of the 19 cases of Pauzat and Poulet, 2 were old soldiers. In all of the cases the symptoms came on after marching. In all the cases there were two cardinal symptoms: painful œdema and periostitis. The œdema was first manifested, after one or more long marches, by a swelling limited to the level of the dorsal face of the two or three intermediate metatarsals, and sometimes invaded the root of the toes or effaced the tendinous projection of the extensors. It is of medium hardness, depressible under the finger, and accompanied by slight elevation of the temperature. The pain accompanying it is not spontaneous, but is provoked by pressure and by movements. There is a very manifest arthralgia of the metatarso-phalangeal joints when a toe is seized with a pair of forceps and repeatedly flexed. The localized œdema and the pain are the signs of the beginning of the affection, and characterize the first period. After some time periostosis begins. The finger, and sometimes the eye, of the observer can detect swelling of the metatarsals. This periostosis may appear as early as the fourth day, but usually

not until the twelfth or fifteenth day. Whether it comes on early or late, the periostosis persists for several weeks, or even months after the disappearance of the œdema, the diminution of the pain, and the return of the tendinous prominences to their normal form. These phenomena characterize the second period—the osteoplastic phase.

There are two views as to the pathogenesis of this affection. On the one hand it is claimed that it is a traumatic periostitis; on the other, it is thought to be an osteo-periostitis of rheumatismal origin, and consequently the local manifestation of a specific affection. Pauzat excludes all constitutional influence. His patients were young men, 21 or 22 years old, robust, vigorous, with well-formed feet, but unfitted by previous occupation for long marches. Fatigue, then, seems to be a predisposing cause. Seven of the eight cases reported by Pauzat were those of soldiers recently enlisted. But it is a curious fact that the affection was never bilateral; one foot only was affected, and one as often as the other. Is it not possible, however, that men that have not learned the whole art of walking perfectly, use one foot more than the other—put more strain on one foot. Some football players, for example, can kick with only one foot, while others use each foot with equal facility. Can the shoes be responsible for the affection? In view of the small number of soldiers affected this does not seem probable; but it would be interesting to have some statistics from the Spanish army, in which, we believe, the soldiers use sandals on the march.

The prognosis of the affection is serious, according to Pauzat; good, according to Poulet. Pouzat's unfavorable opinion is based on the fact that the osteo-periostitis places the patient out of actual service for a considerable time. Poulet bases his prognosis on the fact that the malady does not prevent the patient from entering the service again.

The treatment of the affection, according to Eloy, consists in rest, elevation and immobilization of the foot, and topical applications and compression. Topical revulsives, such as the iodides, should be used in the osteoplastic stage of the disease.

"CHEESINE," the most recent American product, is said to be a product of skim milk, alkali, and hog fats.

OUTBREAKS OF MALIGNANT DIPHTHERIA.

Since November 1st outbreaks of malignant diphtheria have been reported from Brainerd, Minn., Moline, Ill., New Orleans, Wabash, Ind., Galesburg, Ill., Coxsackie, N. Y., Waterloo, Iowa, Oxford Junction, Iowa, and several other places. During the month of October, at Moline, Ill., there were 69 cases and 12 deaths, and during the first 17 days of November 41 cases, with a smaller death-rate. In New Orleans diphtheria has been more than usually prevalent during the past few months. The extent to which it has prevailed in New Orleans of late months is something of a novelty for that city. The statistics of the Board of Health show that the number of cases of diphtheria has been on the increase for several years past, and this year the virulence of the disease has redoubled. This fact, taken in conjunction with the almost total immunity from this trouble enjoyed in the past by this city, proves the existence in New Orleans of conditions and unsanitary influences that did not previously prevail.

In New Orleans the disease is not particularly virulent in localities, but is scattered all over the city with the exception of the Carrollton district, where no cases have occurred. It has attacked indiscriminately white and black, and has visited as well the homes of the rich as the abodes of poverty. The system of isolating the sick by flagging the dwellings in which diphtheria exists has proved effective, as the number of cases is steadily diminishing, so that there is every prospect that the disease will soon be stamped out. During the first 16 days in August there were 69 cases, during a like period in September 77 cases, in October 58 cases, and during the same number of days in the present month but 44 cases were reported. Whilst fighting the disease, the Board of Health has watched every detail that might throw light on the causes producing it. All infected premises have been thoroughly examined as to local and surrounding sanitary conditions, and all information has been carefully tabulated. The Board of Health officials complain of the utter indifference shown by citizens generally to sanitary measures. This accusation, whilst probably just, is one that can be brought against the citizens of many other communities than New Orleans.

In Wabash, Ind., more than a dozen deaths had occurred up to Nov. 18. Dispatches from Wabash

state that "the malady was at first thought by local physicians to be membranous croup, and was so treated, but at a council held it was decided that it is diphtheria. The scourge is confined to children whose ages range from 1 to 10 years. Every case has so far resisted treatment and proven fatal, the patient dying within two or three days. The symptoms are all similar to those seen in croup of the most malignant form."

At Oxford Junction the epidemic is now subdued, but while it lasted there were 190 cases and 42 deaths. At Waterloo, Iowa, the town officials issued a "quarantine" proclamation, closing indefinitely all schools, churches and Sunday schools, and ordering that all persons dying of the disease be buried within twenty-four hours.

At Coxsackie, N. Y., diphtheria was spread in the following manner: The body of a child, aged 9 years, who died of diphtheria at Guilderland, was brought to that village in an open wagon Nov. 10, not disinfected, and buried there. The coffin was opened at the grave and viewed by the members of the family. Since then of those who viewed the body, an aunt died on the 12th, a brother aged 4, on the 14th. The State Board notified the Health Officer that he must quarantine any persons affected with the disease.

A dispatch of November 19 says: "Diphtheria is still raging in Galesburg, Ill. Many deaths are reported and many new cases are daily coming to light. The health officers are making a thorough investigation as to its causes, and have just come to the conclusion that the water in the school building had something to do with it, and consequently have ordered it shut off."

Diphtheria made its appearance in Vermillion County, Ill., about Nov. 14, and soon broke out in the village of Rossville. Cases exist in many families. The public schools were all closed on Nov. 23. No religious services will be held in any church for several Sundays, and no public meetings of any kind will be allowed in the village for four weeks. Business is retarded, and the citizens are greatly alarmed over the malignancy of the disease, but hope by strict measures to prevent its further spread.

Diphtheria is properly classed among the preventable diseases. In spite of this, and of the many and repeated outbreaks of the disease, two of the most difficult things known to sanitarians are to get the people interested in sanitary meas-

ures to an extent sufficient to assist health officers, and to get the newspapers to print really valuable sanitary information. It seems to be a singular trait of the human mind that makes people so blind to their own best interests. Civilized man can be touched most easily through his pocketbook, and sanitary workers should lose no opportunity of showing the people what a good investment, from a financial point of view, health service is.

EDITORIAL NOTES.

DISEASE-RIDDEN INDIANS.—Indian Agent Jones, of the Berthold Agency, has made application to the Department for a physician who shall remain constantly at the Agency. This request is the result of hurried examination of the health of the Indians. Mr. Jones was recently appointed. He finds that disease runs rampant among the entire Indian community. The Indians at this Agency are in a most deplorable condition. In the past their health has been neglected, they have been permitted to roam about the country and, as a result, some members of the tribe have returned to their camps laden with disease, which has spread to nearly every Indian at the Agency. It is understood that the request for a physician has been granted, and that steps will be taken to prevent the further spread of disease among the tribes. The condition of affairs at the Agency in the past has not only ruined the health of the Indians, but has been a constant menace to the whites with whom the Indians necessarily associated. So great became this danger that the county and city authorities were alarmed, and the Mayor of Bismarck was compelled to serve notice on the former Agent that if he did not keep his Indians on the reservation an investigation of the matter would be demanded. Agent Jones hopes to be able to check the disease and promises to keep the Indians on the reservation.

CHOLERA AND CROWDED ROOMS.—DR. DELOS RIOS gives as the result of his prolonged investigations of the subject the following remarkable statistics bearing upon the mortality of cholera, in relation to the number of persons occupying one room when attacked by it: Of 10,000 persons attacked by cholera, and living one person in a room, 68 died; of 10,000 attacked, where there

were one or two persons to a room, 131 died; of 10,000 persons who were attacked, living two to four to the room, 219 died; finally, of 10,000 persons attacked, living four or more to the room, 327 died. No data appear as to the varying size of the rooms, which must, of course, have constituted an important factor in their hygienic character—as must also have been their location in the upper or lower stories, etc.

THE INFANT HOSPITAL AT VIRGINIA BEACH.—This institution, the benefits of which cannot be doubted, appeals to the hearts of all parents, and the noble efforts of those who have had the matter in charge should be encouraged by such liberal contributions as will enable them to continue it and greatly extend the field of usefulness of the sanitarium. The last report shows that the hospital has done good work during the past summer. Mothers are allowed to accompany their children to the hospital, and thus the managers are relieved of much responsibility, and the mothers are materially benefited, not only in health, but in learning the necessity of careful diet and cleanliness for their children. The Virginia Beach Railway furnishes free transportation to mothers and children to and from the hospital.

A VICTIM TO THE MORPHINE HABIT.—The son of a late prominent Chicago lawyer was recently picked up unconscious in the street from the effects of morphine. He said at the station house the next day that his life had been wrecked by following his physician's advice. Six years ago he was recommended to take morphine as an antidote for his appetite for drink. The habit grew upon him until he became wholly a slave to it. He has spent one year in the Washingtonian Home without being cured of the appetite. It is possible that the unfortunate man told the truth, but it is probable that he did not. One can scarcely imagine a physician so ignorant of therapeutics or so devoid of moral sense as to substitute the morphine for the alcohol habit—unless he were a charlatan of the most disgraceful type.

DIRTY MATTRESS FILLING.—At the meeting of the Provincial Board of Health of Ontario on Nov. 9 a letter from a doctor in Guelph was read, enclosing a sample of the wool batting found in a mattress direct from the manufacturer's hands. It was a collection of the dirty odds and

ends about the floor of a woollen factory, including the sweepings. It had an offensive smell and was stated to have a most pernicious effect on the health of the unfortunate people who have to sleep on such beds. The letter concluded by urging upon the Board of Health the necessity of pressing on the Government to have an inspector appointed wherever such manufactures exist, with power to prevent such "abominable outrages upon the health of the unsuspecting public."

EPIDEMIC OF FIBRINOUS PNEUMONIA.—At the recent Congress of Polish Physicians and Naturalists at Lemberg, JAWORSKI and CHROSTOWSKI mentioned a small epidemic of fibrinous pneumonia observed by them. There were five cases of the disease in one house; the patients had been employed in cleaning out a ditch. It was found that the house in which these cases occurred had not been free from pneumonia since 1860. The pneumococcus of Friedländer was found in the exudation taken from the lungs of these patients by means of the needle of a Pravaz' syringe, and also in the earth of the ditch mentioned.

TO INVESTIGATE CATTLE DISEASE.—The Bureau of Animal Industry has requested Dr. Bowhill, of San Francisco to proceed forthwith to San Diego, in connection with the investigation into the cattle diseases on the Pacific coast. Dr. Bowhill will take all apparatus necessary to explain to Boards of Supervisors, and others who may be interested, the means by which different diseases may be discovered and controlled. His mission is purely a protective one, and so far as he is aware there is no increase in the mortality of cattle, nor any new disease developing.

HEALTH AT GREAT ELEVATIONS.—Dr. A. Tucker Wise, in a recently published work, advises patients afflicted with the following diseases to refrain from seeking health at high elevations: Diseases of the brain, heart, or large vessels; tendency to articular rheumatism; kidney diseases (during winter); acute inflammations of throat or larynx; some diseases of bladder or prostate; also, persons somewhat advanced in years should not visit the mountains unless the circulating system is sound.

AN OPENING FOR HOSPITAL INTERNES.—It is said that a circular will soon be issued from the Surgeon-General's office to the resident physicians

of all the civil hospitals in the country for the purpose of giving them an opportunity to appear before a board of medical officers in May, 1889, and enter the army on that date if they so desire, it being the special wish of the Surgeon-General to secure for the medical corps of the army the services of young men who have gained practical experience in their profession by a residence in the large city hospitals.

THE AMERICAN PUBLIC HEALTH ASSOCIATION closed its annual meeting at Milwaukee November 23. The following were chosen officers for the ensuing year: President, Dr. H. A. Johnson, of Chicago; Vice-Presidents, Dr. Jerome Cochran, of Mobile, and Dr. Frederick Montizambert, of Quebec; Secretary, Dr. I. A. Watson, of Concord; Treasurer, Dr. J. Berrien Lindsley, of Nashville. Brooklyn, N. Y., was selected as the place for the next annual meeting.

A NATIONAL BOARD OF HEALTH.—The Richmond, Va., Chamber of Commerce has received a memorial from the Chamber of Commerce, of New Orleans, asking the assistance of the Chamber in the matter of getting legislation to create a National board of health. Hon. George L. Christian, a member of the board, will examine into the matter and give his views.

"DR." CLARKE'S CLERK FINED.—Conrad Lunds, a clerk in "Dr." Clarke's office on Clark street, Chicago, has been fined \$100 and costs for practicing medicine without a license. The prosecution was brought by the State Board of Health, and is an outcome of the failure hitherto of its efforts to suppress "Dr." Clarke's business as a "specialist."

ACUTE GASTRITIS, not yellow fever was the malady of a young woman removed to Bellevue Hospital on Nov. 17, with "symptoms of yellow fever." She died next morning. Even had she had yellow fever, her removal was wholly unnecessary, and probably contributed to her death.

THE PENNSYLVANIA STATE MEDICAL SOCIETY will meet in Pittsburgh in June, 1889. Drs. E. A. Wood and Wm. S. Foster have been selected by the local profession as Chairman and Secretary of the Reception Committee.

DR. J. ADAMS ALLEN, of Chicago, has recently given his library of more than 2,000 volumes to the Presbyterian Hospital of this city.

SOCIETY PROCEEDINGS.

Medical Society of Virginia.

Nineteenth Annual Session, held at Norfolk, Virginia, Oct. 23, 24, and 25, 1888.

(Concluded from page 749.)

FRIDAY, OCTOBER 26—THIRD DAY.

THE PRESIDENT IN THE CHAIR.

DR. JOHN B. HAMILTON, Surgeon-General U. S. Marine Hospital Service, was introduced as an invited guest and, in response to requests, gave an ACCOUNT OF THE EPIDEMIC OF YELLOW FEVER IN FLORIDA.

He said he could not hope to say anything in the nature of *instruction* to this old and distinguished Association, especially as what he shall say is entirely unpremeditated and without preparation. But in epidemiology *history* is always interesting, and he will therefore briefly give the outline history of the epidemic of yellow fever now existing in the State of Florida.

Last year the yellow fever appeared in Key West in the family of a restaurant keeper by the name of Baker. It appears that a family of Bolios, who had kept hotel in Havana in various places, the last being called the *Quinta-Avenida* (Fifth Avenue Hotel), unfortunately for Florida, emigrated to Key West. Their household effects, under the regulations governing the regular lines of steamers, could not be shipped by them, so they shipped their effects, consisting of bedding and various articles of furniture, by an irregular "tramp," not now running, called the "Cochran." There was no objection officially made at Key West, as there was neither Government nor local quarantine, and these were landed and stored above Baker's restaurant. The Baker family died of the fever, and thus the fever started and rapidly became epidemic. The Government, under the operation of that section of the statutes forbidding interference with local authorities, did nothing except, on request of the Governor, to aid the local board, established a dispensary and paid the expenses of the city hospital. To enable the speedy depopulation of the city, a refuge camp was established at Egmont Key, at the mouth of Tampa Bay. No case from Egmont communicated the disease.

The first cases in Tampa were kept secret from August to October 21. A family of Italians by the name of Turk, fruit dealers, brought the fever into Tampa. The steamers had refused, under orders from the Hillsborough County Board of Health, to bring fruit from Havana or Key West. These Italians finding it impossible to continue in business set up a smuggling line and brought

fruit by way of Punta Gorda Bay, and overland to Tampa. For this purpose the man Turk and his assistant Peep, or "Pete," made frequent surreptitious visits to Key West while the disease was there epidemic, and blankets were purchased in the infected city, and used while on the overland trip and brought to Tampa. It is a significant fact that the whole family of the Italians were the first taken sick, that they were not publicly known to have been out of the town, although the fact is now known. The measures taken by the Government were simply to conform to the wishes of the Governor to aid the Hillsborough County Board of Health. The duty of preventing the spread of the disease was undertaken by the Florida State Protective Association, an organization consisting of one representative from each County Board of Health, under the presidency of Dr. King Wyley, of Sanford. In December the Association raised the quarantine against Tampa; the County Board of Health asserted that the disease had disappeared, but unfortunately the disease had not been stamped out, and although the cases of fever lingered all winter in Tampa its existence there was bitterly denied.

From Tampa the disease spread to Plant City, Manatee and other places, and it is now believed that the fever was at Jacksonville as early as February. Dr. Guit  ras, of the Marine Hospital Service, an acknowledged expert, says that, in his judgment, at least two of the cases of "society fever," of which there were over thirty reported in Jacksonville in that month, had the well-marked clinical history of yellow fever. Nine of these cases died. Dr. Potts treated cases in Bay Street in June, and there were probably cases continuously until the formal announcement was made.

So-called isolated cases had been reported in Jacksonville after the case in Bay street had been treated in June by Dr. Potts, but that the local authorities denied the presence of an epidemic and placed a guard around each case. This state of things existed until August 26, when the spread of the disease in Jacksonville became so great, cases springing up at various points in the city, that could not be traced to any of the so-called isolated cases, that the authorities had to declare the disease epidemic.

The disease had been introduced in Decatur, Alabama, by a man who had gone from Jacksonville while all of the cases in that city had been reported under guard. His ticket had been from some point outside of the infected city, and consequently he was not denied admittance.

The fever had been introduced in Gainesville and Fernandina by baseball players who had played a game of ball in Jacksonville before the epidemic nature of the disease had been declared and then returned to these cities.

He then went on to explain the Government work at Camp Perry, and said that since its

establishment there had been only one death from yellow fever in the fever hospital at the Camp. He said that the experience of the physicians at the camp went to show that five days was the incubative period, and that when persons had been in the Camp for that length of time and did not develop the disease, there was no danger of their having it, no person having spent ten days in the camp had developed the fever after leaving the station.

He spoke of the lack of local inspection at Tampa where the disease first appeared this season, and said that if the first cases had been reported that there would probably have been no epidemic, and he also said that he had proof to show that when the case of McCormack was reported as the first in Jacksonville, that the fever was even then epidemic.

He also stated that while the fever was raging at Key West, he, at the request of several health officers, had prepared a bill providing for the establishment of a State Board of Health, but it was laid on the table by the Florida Legislature through motives of false economy.

He concluded by saying that the inspection of Florida cities, ordered by the Government, had developed the fact that the yellow fever was epidemic in both Enterprise and Fernandina.

DR. RANDOLPH BARKSDALE, of Petersburg, read a

REPORT ON PSYCHOLOGY AND NEUROLOGY.

He sketched the history of the treatment of insanity. Over 2,000 years ago, insanity was believed to be a state of possession by the devil, and the treatment was directed towards driving the devil out, and punishment of the person for letting the devil get control of him. Hippocrates was the first to cast off such superstition, and announced that insanity was the result of disease of the brain; that the mind—the soul—could not be diseased, and his doctrines prevailed and resulted in improved treatment. But after the fall of the Roman Empire these doctrines passed away, and again the insane became the victims of persecution and of punishment. And it was not until 1795 that Pinel inaugurated the reformation in treatment which prevails to this day. He announced that insanity is a disease, and that the insane are therefore entitled to all the care and tenderness of the skilled physician and nurse. From year to year since then, improvements in the provisions for and care of the insane have taken place, as of other diseases. Under the head of *neurology*, Dr. Barksdale referred to some of the approved uses of electricity in medicine, and also noted approvingly some statements of Dr. Seguin and others regarding the localization of cerebral functions with reference to the help of such information to the surgeon in selecting the site for trephining in certain obscure brain injuries or diseases.

DR. W. D. HOOPER, of Liberty, in his REPORT ON THE ADVANCES IN THE PRACTICE OF MEDICINE,

gave a brief account of the progress of the germ theory in the last twelve months, saying the advance had been in rather a "retrograde" direction, as Sternberg proves Freire's inoculations for yellow fever are a failure, and M. Gibier has not discovered the true germ of that disease, but thinks he himself has! Pasteur's patients are dying of hydrophobia, but Koch is more fortunate with his bacillus, as it was accepted as true by a recent Congress for the study of tuberculosis which met in Paris. Pasteur thinks M. Gamalier, of Odessa, has discovered a true inoculation for cholera, and referred his communication to the prize committee of the Academy of Sciences.

DR. BARKSDALE also gave a description of a NEW METHOD OF TREATING ULCERATED BLADDER WITH PROSTATIC ENLARGEMENT, BY RE- PEATED IRRIGATIONS

of that organ with warm salt and water holding iodoform in suspension. He uses for the purpose a Y-shaped tube 5 inches long, attaching the tube of a fountain syringe to one of the short arms and a rubber tube to the other, while the long arm of the tube is inserted into the catheter. He reported two cases: the first, aged 78 years, relieved on his deathbed when all other means had failed; the second, aged 75, perfectly cured, as he now sleeps all night without emptying his bladder, and rides horseback during the day.

DR. C. E. BUSEY, of Lynchburg, read a paper on

CULTIVATION OF VOCAL MUSIC IN THE SCHOOLS, AS ONE OF THE MEANS OF PREVENTING - PHTHISIS.

He states it as a well-known fact that those nations which are given to the culture of vocal music are strong, vigorous races, with broad, expansive chests. If an hour a day was devoted in our public schools to the development of vocal music, there would not be the sad spectacle of the drooping, withered, hollow-chested, round-shouldered children. There is too great a tendency to sacrifice physical health upon the altar of learning. Vocal music is gymnastic exercise of the lungs, producing increased expansion of the lungs by development of the lung tissue itself. The lungs in improved breeds of cattle, which naturally take little exercise and are domiciled much of the time, are considerably reduced in size when compared with those animals running at liberty; and so it is with the human race who lead inactive lives caused by civilization. Phthisis generally begins at the apices of the lungs because these parts are more inactive, and because the bronchial tubes are so arranged that they carry the inspired air with greater facility to the bases than to the api-

ces. During inactivity, a person will ordinarily breathe about 480 cubic inches of air per minute. If he will walk at the rate of six miles an hour, he will breathe 3,260 cubic inches. In singing, this increases more than in walking, as to sing well requires all of the capacity of the lungs. The instructor of vocal music, in addition to his musical education, should understand the anatomy and physiology of the respiratory organs.

DR. G. McDONALD, of Union, West Virginia, in his

REPORT ON OBSTETRICS,

spoke of the value of *asepsis and antisepsis in midwifery*, repeating the precautions that have time and again been repeated in books, journals, etc. As to *anæsthetics* in labor, chloral hydrate, in 15 grain doses, every half hour or so, is better during the early stages of labor than chloroform, which latter should be reserved for the final throes. The placenta is best expelled by *Credé's method*. It has been recommended to pack the cavity of the uterus with iodoform gauze in cases of *post-partum hæmorrhage*, after the failure of ergot, hot or cold injections, etc.; but as a rule, empty the uterus promptly and cause tonic contraction of the organ. In cases of *placenta prævia* the tampon may undoubtedly be used to gain time for sufficient dilatation of the os uteri in order to use the hand, etc. When a case of *occipito-posterior position* is seen before rupture of the membranes, and before the head and shoulders become impacted in the pelvis, introduce the aseptic hand (patient under chloroform), catch the head between the fingers and thumb and rotate the occiput forwards, when the labor may proceed as a normal case. In regard to *face presentations*, when the chin falls into the hollow of the sacrum, bring the chin forward, and hold it there until expelled. The Veit-Smellie method is advocated for delivery of the after-coming head in *breech cases*. The importance of laparotomy, etc., in rare instances in obstetrics is dwelt upon.

Dr. W. W. Parker, of Richmond, read a paper entitled: *What is the Duty of a Doctor to a Patient suffering from Malignant Disease?*

DR. GEO. B. MCCORKLE, of Covington, presented the

REPORT ON DISEASES OF WOMEN.

In regard to *electricity*, he presented the conclusions of Dr. Martin, of Chicago, as to its use in the treatment of fibroids of the uterus: It is free from danger; is absolutely painless; invariably checks excessive hæmorrhage; rapidly reduces the size of the tumors; stops neuralgic pains; its use is based upon the principle of the exact dosage of electricity. Electricity has likewise proved useful in removing tumors from the female breast, in the practice of Dr. Garnett, of Berlin. It has also been useful in increasing the flow of milk in mothers' breasts. Dr. Byford uses electricity in

paralysis of the bladder after inflammation has subsided. Dr. Rockwell has successfully used it in amenorrhœa. Even in a case of complete extrusion of the uterus electricity has been successfully resorted to to retain the organ in place after its reposition. Operative procedures seem to be taking the place of pessaries. Dilating and curetting the uterine cavity for numerous growths on its inner surface, etc., are again becoming very popular.

Dr. Oscar Wiley, of Salem, made the report on *Diseases of Children*.

Dr. M. A. Rust read a paper entitled: *Mysticism in the Development of Medicine*.

Dr. William L. Robinson, of Danville, read a paper on the *Conduct of Enucleated Women before and after Delivery*.

DR. ALFRED C. PALMER, of Norfolk, read the

REPORT ON OPHTHALMOLOGY.

He divided his subject so as to speak systematically of whatever concerned: (1) the lids, lachrymal apparatus and orbit; (2) the cornea, conjunctiva and sclera; (3) accommodation, refraction and the motor apparatus; (4) the uveal tract, vitreous, aqueous, and lenses; (5) the retina and optic nerve.

DR. JOHN T. FRANCIS, of Norfolk, presented the

REPORT ON OTOTOLOGY AND LARYNGOLOGY.

He first speaks of the pathology of aural vertigo, and then, with reference to the treatment of otorrhœa, says that lactic acid attacks only the fungous growths, and diminishes the secretion and causes the odor to disappear. Pilocarpin is also recommended. Photoxylin (20 per cent. solution) closed a perforation in the membrana tympani. The ear is first syringed with boracic acid solution, and dried with absorbent cotton. Then the edges of the perforation are painted several times until the perforation is covered. He reports a case of serious injury to the ear as a result of simply syringing that organ for a purulent discharge. The remainder of the report is on laryngology, and speaks mostly of laryngeal tumors, tracheotomy, chronic and atrophic rhinitis, hay fever, etc.

DR. CHAS. M. SHIELDS, of Richmond, read a paper on

ENLARGED TONSILS—WHAT SHALL WE DO WITH THEM?

He had never seen a single case of true hypertrophied tonsils permanently removed by the application of any of the astringents, absorbents or mild caustics suggested, or by the injection into their substance of iodine, ergotin, etc. In soft varieties or in the case of young children where prompt contraction of the bloodvessels follows cutting, he uses the tonsillotome; but in the hard fibrous varieties and in adults, where there is

danger of alarming hemorrhage he prefers the use of the galvano-cautery.

From six to eight points over the surface of the tonsil should be touched with the moxa point electrode heated to a red heat at one sitting, and usually from four to eight sittings are required to shrink up the tonsil thoroughly. If a 10 per cent. solution of cocaine is first applied, patients will usually complain of no pain. Dr. Shield's conclusions were: In all cases except in young children or where the tonsil is very soft, the galvano-cautery method of removal is to be preferred, because, 1st. The tonsil can be more nearly restored to its normal proportions. 2nd. Irregularly shaped masses of hypertrophied tissue can be removed that could not be encircled by the tonsillotome. 3rd. The effect seems to be more permanent. 4th. It is devoid of all danger.

Dr. Joseph A. White, of Richmond Va., read a paper on *Improved means of Diagnosis and Surgical Treatment of Nasal and Throat Troubles, with practical remarks.*

After the adoption of a number of resolutions simply of State or local interest, etc., this session of the society adjourned *sine die*.

The social features were excursions, drivings, banquetings, etc. Of course they were popular, as they were all well prepared, and most hospitably given. The effect of this session upon the profession of this State was most excellent.

Obstetrical Society of Philadelphia.

Stated Meeting, October 4, 1888.

THE PRESIDENT, T. M. DRYSDALE, M.D.,
IN THE CHAIR.

(Continued from page 753.)

DR. W. J. TAYLOR presented with the following remarks:

THREE UTERINE MYOMATA.

These three tumors were removed to-day from a case of considerable interest. The patient, a woman, æt. 30 years, was married on the 7th of last May. On the 20th she had her last menstruation, and from that time considered herself pregnant. The abdomen began to swell and she had a good deal of pain. A few days ago she sent for me, and I found her with the abdomen much enlarged and presenting the symptoms of pregnancy. On the right side, however, there was a hard mass which puzzled me very much. She was seen by Drs. W. W. Keen and B. C. Hirst, and the conclusion was reached that an operation was necessary. To-day abdominal section was made. It was found that the uterus contained a foetus, and that there were three fibroid tumors: the largest was sub-peritoneal, the smallest was

attached by a small pedicle, and the second in size was also sub-peritoneal. These were removed, and the patient is at present doing well.

DR. W. W. KEEN said that Dr. Taylor had not done himself justice in his modest narration of the steps of the operation and in his reference to the question of diagnosis. When I saw the patient last Monday it was a question whether the large mass on the right side was a uterine myomata or a tubal pregnancy. It had grown rapidly and *pari passu* with the uterus. Two facts in favor of its being a solid tumor were its density, and the fact that the pulsation of the aorta could be distinctly heard with the stethoscope at every point over the tumor. Its rapid growth seemed to be opposed to the idea of myoma. Dr. Hirst was of the opinion that it was a tubal pregnancy, at the same time recognizing an intra-uterine foetus also. She had albuminuria. When Dr. Taylor opened the abdomen two large tumors presented, which coalesced below but were separated above. Passing the hand into the abdomen the left tube and ovary were found normal. On the right side, it was at first not possible to recognize the ovary and tube, but by enlarging the incision the hand was passed well down, and the ovary and tube found. By the side of this tube was a vein considerably larger than my thumb. The pregnant uterus was recognized as the large tumor to the left. It was soft, elastic, and dark in color. That to the right was recognized as a neoplasm. While I lifted with difficulty the upper end of the tumor, Dr. Taylor incised its capsule and enucleated it until he came to the attachment to the uterus which was over a space of three or four inches in diameter, when the weight of the tumor then caused the uterine tissue to tear, and the large sinuses began to bleed freely. I next grasped the pedicle with the thumbs and forefingers of both hands while he stripped off the sac. The tumor was thus quickly removed, and the uterine tissue and the wall of the sac were seized with large hæmostatics and hæmorrhage controlled. It was necessary at several points to introduce sutures into the uterine wall itself to control the bleeding. The redundant portion of the sac of the tumor was cut away, and the edges brought together with the continuous catgut suture; a drainage tube was passed down into its cavity. In at least two places, and possibly four, there were, upon the uterine wall small masses about half the size of my little finger-nail. These looked like beginning malignant tumors. From the appearance and the rapidity of the growth, I think this may be a sarcomatous tumor, though it is possibly a simple myoma.

DR. PARVIN thought that there was one point that even Dr. Keen had omitted. He saw the operation and the great mass of the tumor was included between the layers of the R. broad liga-

ment, so that the first incision was through the anterior layer of the ligament. Formerly in removing a subperitoneal fibroid from the posterior surface of the uterus the pedicle partially tore while the ligature was being applied and there was free hæmorrhage. He finally succeeded in stopping the bleeding by the use of the continuous catgut suture, after other measures had failed.

DR. HIRST said that Dr. Keen had certainly expressed his views. The symptoms pointed strongly to extra-uterine pregnancy. If the case had been allowed to go on to term Cæsarean section would have been required, as the tumor filled up the pelvis. He had looked up this subject of injuries to the pregnant uterus and had found some interesting cases. In one case the woman was thrown to the ground and jumped upon when six months pregnant. The foetus was killed but she went on to term. In another case trachelorhaphy was performed during the second month of pregnancy. This case went on to term. In another instance a number of leeches were applied to the cervix of a pregnant uterus without any interruption to pregnancy. In a case I had last spring the woman was squeezed between a bale of goods and the wall and was seriously injured, but she went on to term. A German operator has such confidence in his ability to plunge a trocar into the uterus without doing harm that he advocates the occasional withdrawal by aspiration of the liquid in hydramnios with very great distension of the uterus, allowing the child to go on to term.

DR. PARISH said that the removal of ovarian tumors during pregnancy was recognized as a proper operation, but that the removal of uterine subperitoneal fibroid tumors during pregnancy was not a proper operation, except under certain special circumstances. The injuries necessarily inflicted on the uterus in their removal are liable to induce abortion. It would be interesting to have the further history of this case. The microscope alone could determine the character of this growth. Under ordinary circumstances the rapidity of the growth would point to sarcoma, but it is well-known that in pregnancy fibroid tumors occasionally take on a rapid growth. He supposed that Dr. Hirst did not refer to the cases he had cited as indicating rules of practice. It must be the urgency of the condition which justifies operations on the pregnant uterus. While pregnancy may go on after injuries to the uterus there are numerous unreported cases where the opposite has been the result. Where a subperitoneal tumor can be lifted from the pelvis pregnancy may go on.

DR. J. PRICE thought that obstetrically the case was one of great importance. Some time ago he had called attention to three parallel cases. They all went to term with a pelvic tumor and died undelivered. The question of differential diagnosis

scarcely concerned many operators at present, all that was required was the knowledge that there was a tumor present. We should never wait until the patient's general health has been impaired, as this is a departure from that generally followed in general surgery.

DR. HOFFMAN had been recently consulted by a woman who stated that she was pregnant and that at previous labors the baby "had to be mashed up." The pelvic cavity was found to be filled with a tumor and she was advised to undergo an operation for its removal. This she refused. It seemed to him that there could be no doubt of the propriety of immediate operation in cases like the one before him.

DR. B. F. BAER believed that in this case, after the exploratory incision had been made and it was found that no extra-uterine pregnancy existed, it would have been better to have closed the incision than to have removed this amply located solid tumor; but since the removal was determined upon, it would have been better to have amputated the uterus at the neck than to have permitted it to remain with a great wound in its side and in the broad ligament. It is not likely that, after such a serious operation, the pregnancy will go on to term anyway, and abortion occurring within a short time after the operation will certainly add to the risks of the patient. He asked if there were any subjective signs of pregnancy (extra-uterine) in this case, such as the peculiar pains, uterine hæmorrhage or discharge of decidua?

DR. KEEN thought that the removal of the uterus would have been a wholly unjustifiable procedure. It was possible that the woman might miscarry, but it was also possible that she would go to term. It has been shown that pregnancy is not necessarily a bar to operation. Not only would the sacrifice of the foetus have been unjustifiable, but hysterectomy would have made a young married woman sterile. The added dangers of hysterectomy, too, might have turned the scale against the patient.

DR. M. PRICE asked if Dr. Baer would expect to have uterine hæmorrhage in a case of extra-uterine pregnancy where there was also a foetus in the uterine cavity?

DR. B. F. BAER said that he would expect in such a condition that, as the result of the extra-uterine irritation, abortion would take place, and then we would have both hæmorrhage and decidua. In regard to the removal of the uterus in this case, it seemed that Dr. Keen condemned the procedure because of his anxiety to save the child. He, however, believed that the child would have had a better chance for its life if nothing had been done. But if operative measures were imperative, then he still held to his former opinion. In answer to still further questioning from Dr. M. Price, he said that he believed that hæmorrhage may occur and the extra-uterine sac remain unrup-

tured. He had seen a case which supported that view. The patient, after missing her menses for two months, was one day seized with severe pain in the right iliac region, which was followed by shock. She fell in her yard, and when her physician arrived he found a condition of shock as well as hæmorrhage. A few weeks later she had a similar attack. He was then sent for and the diagnosis of extra-uterine pregnancy arrived at. This was five years ago, and Thomas' method of operating by the vagina and opening the sac with a hot knife was followed. The sac was found with no evidence of rupture in it. The liquor amnii was clear and no evidence of hæmorrhage into the cyst, which there would have been had a rupture taken place. The foetus was indeed alive. The patient died on the fifth day after operation.

DR. WM. J. TAYLOR closed the discussion by saying that in this case the tumor was absolutely fixed. The woman's general condition was poor; the pulse 120; the patient not able to eat; had suffered intense pain and diarrhœa for a number of days previously. The tumor was also growing rapidly. The urgency of the case seemed to call for some relief. There was albuminuria. If the matter had been allowed to go on to term—provided the woman had lived that long—the risks to both mother and child would have been greater than they were at the present time.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Transmissibility of Tetanus—Infectious Nature of Tetanus—Osseous Grafts—Corrosive Sublimate in Cholera—Management of Abortion—Periodical Neuralgia of the Cornea.

Professor Verneuil, who introduced into science the notion of the contagiousness of tetanus, and its equine origin, follows the development of this idea with great solicitude and embraces every opportunity of justifying his views on the subject. At a recent meeting of the Academy of Medicine he read a report on two papers, the one by Dr. P. Berger, entitled, "The transmissibility of tetanus from man to man," and the other by Dr. G. Richelot "on the infectious nature of tetanus." M. Verneuil reviewed the whole subject in a most masterly manner, and terminated his report with the following conclusions: 1. The intra-human transmission which although demonstrated as yet by only a small number of facts, cannot be contested in principle. 2. This transmission does not appear to be affected by the atmosphere, but is accomplished by direct or indirect contact. 3. The first mode, that is, "immediate contagion," is not as yet established by any decisive fact. The

second mode, or "mediate contagion," is supported, on the contrary, by a great number of clinical proofs. 4. It is sometimes still very difficult to discover the veritable agent of transfer among the numerous and varied intermediary means graduated between the first tetanic subject and those that follow. 5. This research should be prosecuted with pertinacity, for it alone will teach us to prevent a mode of extension of the malady, which is perhaps rare, but altogether indisputable.

At the same meeting Dr. A. Guérin presented a certain number of osseous grafts practiced by Dr. Mossé, of Montpellier. These operations were on the rabbit, the dog, and the monkey, and were thus classified: 1. Re-implantation of a fragment of the skull removed by trephining. 2. Transplantation of the fragment on an animal of the same species. 3. Transplantation on an animal of a different species. It is sufficient to preserve the periosteum for this re-implantation to be effected with success.

Dr. Yvert, a French army surgeon, has made a communication to the Academy of Sciences on the treatment of cholera with corrosive sublimate. During his service at Tonquin he had occasion to employ the drug in doses of from 2 to 4 centigrams a day, in subjects affected with cholera. The results were most encouraging, for of 45 patients suffering from the disease, 9 only had succumbed, thus reducing the mortality to 20 per cent. He had also recourse to the same medication in a certain number of convalescent soldiers, the greater number of whom had suffered from dysentery, and although they had sojourned in the midst of cholera patients, not one was affected by the cholera epidemic, thanks to the absorption of the bichloride of mercury which was administered to them as a preventive measure.

The following are rules published by Dr. Nitot in the *Revue Obstétricale* on the management of cases of abortion: 1. In presence of the imminence of abortion we should, if there is still time, notwithstanding a commencement of uterine contractions and loss of blood, prevent the abortion being effected, in prescribing absolute rest in bed, enemata of laudanum or, what is still better, hypodermic injections of morphia. 2. If the abortion is inevitable, we should favor the spontaneous expulsion of the product of conception, opposing at the same time a too abundant loss of blood. With this view absolute rest should be insisted on, and vaginal injections, which should be hot (45° C.) and antiseptic, should be prescribed every two or three hours. These will favor the dilatation of the uterine neck and combat the hæmorrhage. However, should the flow of blood be too abundant, vaginal plugging should be employed. This measure will act not only in arresting the hæmorrhage, but will hasten the termination of the abortion. The administration of the ergot of

rye should be guarded against; as the drug, in provoking contractions of the neck of the womb, is liable to imprison the placenta in the uterine cavity. 3. But if, in spite of these precautions, the abortion, clearly established, lingers some time; if the placenta, adherent or not, remains imprisoned in the uterine cavity, it would be better to accomplish artificial delivery than to temporize longer, and to empty the uterus in order to avoid the dangers of a tardy abortion, such as hæmorrhage more or less grave, or septicæmia, which are likely to occur. In acting thus, the future safety of the patient is ensured. 4. Finally, if it should become necessary to combat one of these dreaded complications which may break out, such as septic fever or repeated abundant hæmorrhage, which the plugging and the hot injections might have arrested only momentarily, no more hesitation should be permitted. It will be necessary to intervene with the fingers if the uterus is in a state of sufficient dilatation, or in practicing the antiseptic "curage" or cleansing of the uterus after previous dilatation, if this is necessary; for to wait longer, in this case, would be to expose the life of the patient.

Dr. Graclement, of Lyons, has described an affection which is rather frequent, consisting in a sort of periodical and ill-defined neuralgia of the cornea, following a very slight traumatism of this membrane. The traumatism consists, more frequently, in a simple grazing by the leaf of a shrub, the finger of a little child, or any other soft body which cannot do much hurt. To this condition he has applied the term "traumatic keratalgia." Soon after the accident, although the cornea presents no excoriation, the patient suffers a good deal and periodically from neuralgic phenomena which are reproduced irregularly for some years, like rheumatoid pains. One can only attribute these accidents to a slight neuritis of one or more of the ciliary nervous filaments of the cornea which are found in the sphere of action of this slight traumatism. If the stronger traumatisms of the cornea, such as those resulting from the incrustation of a splinter of iron, or any other metal, do not leave behind them similar neuralgias, it is because the nervous filaments touched had been destroyed, and not simply bruised. The only remedy which appears to relieve these patients is the employment of cocaine. A. B.

THE PASTEUR INSTITUTE in Paris was formally opened on November 14 by President Carnot. Pasteur himself was present and was loudly cheered by the people.

TRINITY MEDICAL DINNER.—The Students of Trinity Medical College held their twelfth annual banquet on Nov. 13. More than 250 guests were present.

DOMESTIC CORRESPONDENCE.

LETTER FROM BOSTON.

(FROM OUR OWN CORRESPONDENT.)

Acute Lobar Pneumonia in Children—Pelvic Hæmatocle; Operation by Laparotomy; Suture of Cyst to Abdominal Wall and Drainage—Laparotomy for Volvulus—Removal of a large part of the Frontal Bone for Compound Fracture.

At the meeting of the Suffolk District Medical Society, on Oct. 27, Dr. C. W. Townsend read an extensive and interesting paper on "Acute Lobar Pneumonia in Children." He said that we should make a distinction between *lobar* and *lobular or broncho-pneumonia*, although this is not generally done, it being customary to find both forms classed together in the returns as pneumonia. Lobar pneumonia is an acute specific disease, whereas lobular or broncho-pneumonia is a secondary affection and is almost always secondary to a bronchitis affecting the smaller bronchi. When a pneumonia is spoken of in young children, the lobular pneumonia is the form that is generally understood to be in consideration. This, however, should not be the case; for the lobar form is by no means uncommon, the writer having recently seen 42 cases of undoubted lobar pneumonia in children under 10 years of age. Of these cases, 5 occurred in children under 1 year of age; 5 occurred in children between 1 and 2 years old, and 7 occurred in children between 2 and 3 years old.

Probably the reason that pneumonitis is so frequently overlooked in infants is because the signs that are diagnostic of pneumonitis in adults are in large measure either modified or wanting. These signs are:

1. Sudden onset with rigor.
 2. Localized pain in the affected side.
 3. Cough.
 4. Rusty expectoration.
 5. A characteristic high temperature.
1. The onset is generally sudden in young children, and the chills or rigors are almost always absent. In their stead are found vomiting and convulsions.
2. Pain is frequently absent in young children, and when present it may be elsewhere than in the affected side, *e.g.*, it is frequently referred to the abdomen.
3. The cough is generally present. It is frequently loose and hacking. In 6 of the above-mentioned 42 cases there was no cough at the onset. It frequently increases as the disease increases.
4. The rusty expectoration is generally absent in young children, for it is swallowed. Of the above cases only 3 cases, *æt.* respectively 7, 8, and 10 years, had any rusty expectoration.
5. The increasing high temperature is charac-

teristic in young children as found in 37 of the above cases, 29 cases ending by crisis and 8 by lysis. The seventh day was generally found favorable for the crisis, the temperature rose continuously up to 104° as a rule. The highest temperature reached was 106° in one case. None failed to reach 103° .

A change in the disposition of the child generally occurs after the crisis. The cough frequently continues. The physical signs generally coincide with the temperature. They may be tardy in making their appearance. The true crepitant râle is frequently not found but vocal fremitus and consolidation will decide. It is highly probable that some of the so-called acute febriculas of children are really pneumonia. The expiratory moan and dilatation of the alar nasi are not characteristic. Cerebral pneumonia frequently means only pneumonia in a child of a highly nervous organization, and there are no cerebral or meningeal lesions. Herpes occurred in only three of the above cases.

The diagnosis must be frequently made from the history. Pneumonia is sudden and broncho-pneumonia is less sudden and generally follows bronchitis. In pneumonia the temperature is higher than in broncho-pneumonia. Broncho-pneumonia never ends in crisis. The prognosis is generally favorable. Of the above-mentioned 42 cases only two died and both of these were feeble, ill-nourished children. One was rachitic and the other had a large abscess. Several cases have been reported where children have been born with pneumonia, the disease having commenced in utero. All of these cases are fatal.

In the discussion, Dr. Francis Minot said, that the fact is important of the great frequency with which it can be *demonstrated* that pneumonia has a local organ, *i.e.*, that it is infectious. It may occur successively in the same house in different seasons.

Dr. T. M. Rotch said that in children with pneumonia there is an absence of the physical signs that occur in adults. The child may be totally unconscious for a week, and then the pneumonia shows itself. He was reminded of two cases in one family, one child being aged $3\frac{1}{2}$ years and the other 16 months. In the elder the attack commenced twelve or fourteen hours later than in the younger. For five days both were unconscious and vomiting, with symptoms of acute milk poisoning, and there were no physical signs. Their food was changed and they remained unconscious for three days more, when the left lungs showed a commencing solid area and the temperature went up, together with the other signs of a real pneumonia. This continued for seven days and ended in crisis, and all along the signs in the elder child continued to be twelve or fourteen hours later than in the younger. In the treatment antifebrin is a good thing, but in

administering it we should avoid giving it at the time of the crisis, when it is dangerous.

In the absence of the writer, the Secretary read a paper by Dr. C. B. Porter, on "Pelvic Hæmatocele. Operation by Laparotomy,—Suture of Cyst to Abdominal Wound and Drainage,—Recovery." The patient was 30 years old and unmarried. Her catamenia had been regular and normal every four weeks, the flow lasting four days. During the two weeks previous to being seen, she had been losing appetite and strength. Her bowels were regular, and she continued to work at her ordinary duties. One night she was awakened from sleep by severe pain in the left iliac region at first and then shifted. Then there was vomiting and small movements. A swelling appeared in the right iliac region. On examination she was lying on her back with her legs extended and her countenance had an anxious expression. Pulse 68. A swelling was found in the right iliac region. Per vaginam the cervix uteri was found movable. The urine was examined and was normal. The vomiting became troublesome. The urine had to be drawn with the catheter. On the third day it was decided to operate. An incision was made one inch above Poupart's ligament. A large cystic tumor with tense walls at once came into view. This was stitched to the edges of the wound, so as to shut off the abdominal cavity and it was then opened. Three pints of a dark bloody fluid were then removed. This was examined by the microscope and was found to contain no formed elements. It was probably ascitic fluid with blood. There were no clots. A large drainage tube was put in and the sac was washed with a hot solution of sulpho-naphthol. The third day the discharge was colored. Three weeks afterwards when it was syringed, some threads of necrosed membrane came away. There was steady recovery, and seven weeks after the operation (near 16th) there was very little discharge. On April 3rd she left the hospital.

Dr. M. L. Richardson read a paper on "Laparotomy for Volvulus." On the 3d of July he operated on a man 57 years old, who had a history as follows: On the 28th of June he had a chill and a sensation of fullness of the abdomen and twisting of the intestines, as he himself expressed it. Two days later even a cup of tea caused him to feel very full. His temperature was 99.4 . There was pain in the left iliac region. July 2d, there was no pain and he had two liquid stools. Note this improvement. On July 3d he had a collapse. When seen he had dulness in abdomen, most marked on left side in iliac region. There was vomiting and now severe signs of obstruction. Laparotomy determined upon as a forlorn hope. On opening the abdomen the intestines presented and were distended and of a dark purple color. A twist was found in the small intestine. The

coil was very heavy and filled with fluid. Death followed in a very few hours. At the autopsy the next day the intestines were removed *en masse* and were sent to Dr. Fitz for examination. The blood in the mesenteric system was found clotted and at this stage he was undecided whether this was due to a thrombus in the portal system or to volvulus.

In conclusion, Dr. Richardson said that in grave cases of doubt, with symptoms of obstruction, an early operation is advisable. By an exploratory incision much is gained and little is lost.

In discussion Dr. E. N. Whittier said that he had seen the case in consultation. Note how deceptive the case was. At first the man seemed so little sick that he objected to being kept at home in bed. Note also the two semi-liquid discharges which were deceptive. The mass felt was easily moulded and doughy. The twist was in the upper part of the small intestine, and so the tumor was very low down for it.

Dr. H. E. Marion, in whose practice the case occurred, said that it had not been mentioned that there was vomiting of stercoraceous matter, and also that the necrosis affected nearly the whole length of the small intestines.

Dr. F. B. Harrington reported a case of "Removal of a large part of the Frontal Bone for Compound Fracture. Recovery." The patient was a brakeman, æt. 28, who had been struck on the forehead by a bridge. The face was very much swollen and crepitus could be distinctly found over the middle of the forehead. The patient was dull and heavy, but would answer questions. On incision the frontal bone was found in several pieces overlapping one another irregularly, and in all about one-third of the bone was removed, the exact portion being marked out on a skull that was passed around. The dura mater was found to be wounded in one or two places. The wound was packed with iodoform gauze. For a few days he had delirium, but he recovered rapidly and became rational. When discharged there was a slight pulsation over the cicatrix.

N.

Use of the Heel in Walking.

Dear Sir:—Will you permit me to enter my protest against the editorial entitled, "How to Dress and Walk," which appeared in *THE JOURNAL* of the 17th inst.? I will not be so uncharitable as to suppose that there was any intentional misrepresentation of the fair exponent of the Delsartian method of walking. But she certainly performed her task poorly, if the women of the Physical Culture Club failed as completely to understand that method as the editor of *THE JOURNAL* seems to have failed.

I am familiar with the Delsartian teaching on that subject, and I will say that it does not at all

teach one to ignore the use and support of the heel in walking. It does teach, however, and I believe, correctly, that the weight of the body should *not* be thrown upon the heel. I must decidedly disagree with the editorial writer when he asserts that "the heel was made to step on, to bear the *whole weight* of the body at the beginning of the step." The weight of the body at the beginning of the step, is mainly borne on the ball of the *other foot*. The heel of the advancing foot should barely touch the ground before the ball is also brought down, and it is not till after this that the weight of the body should be transferred to that foot, and then the spring for the next step naturally brings the principal weight upon the *ball* of the foot.

Let anyone try to walk across the floor, putting his whole weight upon the heel of the advancing foot, and even if he does not fall over, I think the experiment will convince him that this method of walking is no more physiological than it is Delsartian. The lady to whom reference was made, is a good Delsartian teacher, and she does not, by precept nor by example, *usually* teach her pupils to let their heels fall into "innocuous desuetude." Respectfully yours,

A SISTER.

November 21, 1888.

[The lecture in question was reported in a Chicago paper. The lecturer's remarks on "how to walk" were quoted directly in the paper. The only meaning that could be given the words quoted was, that a person should not step on the heel in walking. It was not intended to say in the editorial article that the walker should rest for a time upon the heel of the advancing foot.]

BOOK REVIEWS.

AN ILLUSTRATED ENCYCLOPÆDIC MEDICAL DICTIONARY.—Being a Dictionary of the Technical Terms used by Writers on Medicine and the Collateral Sciences, in the Latin, English, French and German Languages. By Frank P. Foster, M.D., Editor of the *New York Medical Journal*, with the Collaboration of William C. Ayres, M.D., New Orleans; Edward B. Bronson, M.D., New York; Charles Stedman Bull, M.D., New York; Henry C. Coe, M.D., New York; Andrew F. Currier, M.D., New York; Alexander Duane, M.D., New York; Simon H. Gage, Ithica, N.Y.; Henry J. Garrigues, M.D., New York; Charles B. Kelsey, M.D., New York; Russell H. Nevins, M.D., New York; Burt G. Wilder, M.D., Ithica, N. Y. Vol. I. With Illustrations; 4to, pp. xii, 752. A—Ca. New York: D. Appleton & Co. 1888.

We have, at last, a medical dictionary that will

repay consultation, and never leave the consulter in doubt. For years the tempers of medical men have been sorely tried by the incompleteness of existing dictionaries, by no means complete when they were published, and necessarily more incomplete as each succeeding year added new words or gave new meanings to terms already in use.

There is but one medical dictionary in any way comparable to the one under consideration, and that is the "New Sydenham Society's Lexicon of Medicine and the Allied Sciences," which has two great faults. It includes a great deal that has no bearing upon medicine or the allied sciences, and its orthography, particularly in regard to German and other foreign words, is singularly defective. Obvious errors in other dictionaries are repeated, showing that much has been taken for granted. Every page of Foster's Dictionary shows accurate work in every respect. It contains no unnecessary matter. Voluminous as the work may appear, it is really compact, concise in definition; the definitions are in almost all cases logical definitions, without the patience-trying defining by synonyms.

This is not an English medical dictionary only; it is also a Latin, or a French, or German medical dictionary. Foreexample, in reading a French work we may turn to this dictionary to find the meaning of a French medical word. We can but regret that it is not also an Italian medical dictionary. Under "Auf" we find more than four pages of German words; under "Aus" more than five pages of German words. Under *Acide* we find fourteen pages, averaging almost 200 titles to a page. *Bacillus* takes up nine pages, *bacterium* three pages, *bone* about eight pages. The analyses of the mineral waters are given when mineral springs are named.

As must be apparent, an exhaustive review of a dictionary in a short space is an impossibility; one meets with the same difficulty encountered by the Hibernian, who found that the subject changed too often for him to become deeply interested. The writer is familiar with almost every lexicon that a medical man can use. Foster's Dictionary is far beyond and above all; the whole work shows completeness and faithfulness, and this can be said of no other medical dictionary. No physician's library will be complete until all the volumes of Foster's Dictionary are on its shelves.

MISCELLANEOUS.

ASSOCIATION OF ACTING ASSISTANT SURGEONS, U. S. ARMY.—Those familiar with the army medical history of the frontier for the past twenty or thirty years will readily bear witness to the faithful and intelligent discharge of their duties, by the Acting Assistant Surgeons of the U. S. A. In fort and in camp, on the long overland expedi-

tion, or in the Indian wars, these men have done their duty as faithfully and with the same professional efficacy as if they had been regularly commissioned officers. Indeed, if they have not borne the burden and heat of the day, certainly their honorable records deserve recognition and preservation. An association of past and present Acting Assistant Surgeons of the United States Army has been formed for the purpose of securing, so far as possible, a correct history of those who have served in this capacity, and also for mutual protection and benefit. The Association desires to obtain a complete list of all medical men who have served as Acting Assistant Surgeons, in the United States Army, and, so far as possible, their complete medical history, date and place of birth, date and place of graduation, date of appointment, medical service and stations, list of contributions to medical literature, inventions, etc., date of termination of service, professional positions held in civil life, present residence and address. All information from friends concerning deceased A. A. Surgeons will be gratefully received. All past and present Acting Assistant Surgeons are cordially invited to become members of the Association. The badge of the Association is the Geneva red cross. The enrollment fee is \$1.00. The necessary blanks will be forwarded upon application to

W. THORNTON PARKER, M.D., Recorder A. A. A. S.,
Newport, R. I.

THE TELEPHONE has been extensively used by physicians in prescribing for their patients, and the story of the doctor who ordered its parents to hold the baby to the 'phone until it coughed and then ordered some medicine for whooping cough is familiar. But a St. Paul doctor will probably not trust this useful invention hereafter. He was requested over the wire to visit a sick child two miles away the other night, and not wanting to go prescribed over the 'phone and went back to bed. On making the call the next day he found the patient doing very well under the care of another doctor, and went back with a change of mind regarding the usefulness of Professor Bell's invention.—*Chicago Herald*.

THE TRI-STATE MEDICAL ASSOCIATION met at Memphis on Nov. 13. The attendance was large, embracing many of the leading physicians of Mississippi, Arkansas and Tennessee. The Association elected the following officers:

President—Dr. S. W. Sanford, Tennessee.
First Vice-President—Dr. J. Y. Murray, Mississippi.
Second Vice-President—Dr. L. L. Battle, Arkansas.
Third Vice-President—Dr. J. A. Battle, Tennessee.
Secretary—Dr. S. A. Rogers, Memphis.
Assistant Secretary—Dr. R. W. Pate, Memphis.
Treasurer—Dr. T. J. Crofford, Tennessee.

THE THIRD ANNUAL STATE SANITARY CONVENTION, under the auspices of the Kansas State Board of Health, will be held in the city of Emporia, Kansas, on Wednesday and Thursday, December 5 and 6, 1888. The first session will commence on Wednesday at 7:30 P.M. An interesting series of papers and discussions are promised. All the sessions are open and free for the public to attend. President, Hon. John R. Wright; Secretaries, J. W. Redden, M.D., of Topeka, and A. M. Hawont, of Emporia.

HEALTH OF CALIFORNIA.—Dr. G. G. Tyrrell, Secretary of the State Board of Health, in his report for October, says: Reports received from seventy-nine localities return the mortality for the month of October as 902 decedents in an estimated population of 726,850, or an annual death-rate of 14.88.

DR. F. H. PAYNE, who has practiced medicine for the last twelve years in Berkeley, Cal., has been appointed Director of Physical Culture at the University of California.

ADULTERATION OF FOOD.—According to a report made by the Dominion analyst, out of 909 food samples analyzed, 25 per cent. were found to be adulterated. Out of 81 samples of baking powder 45 were adulterated with foreign matter; 33 out of 117 samples of coffee were impure. Cream of tartar, bicarbonate of soda, butter, milk, mustard, and spices were largely composed of foreign and deleterious substances. A member of the Dominion parliament, Mr. Cochran, representing East Northumberland, has recently been heavily fined for selling skim milk. The minister of inland revenue states that he is determined to check the production and sale of spurious and adulterated articles of food, and with that object in view is prosecuting the offending parties when their guilt has been discovered.

THE ALBANY HOSPITAL.—From the report made for the year ended October 1, by Treasurer Joseph W. Russell, it is shown that 954 patients, 680 of whom were beneficiaries, were treated in the hospital and 7,421 in the dispensary, and 4,233 gratuitous prescriptions were given out. The expenses were \$28,200. Of this sum \$10,620 was spent for provisions and supplies and over \$3,000 for medicines and medical supplies. The endowment fund was increased during the year by \$11,000, sending it up to \$39,000. The legacies amount to \$11,000, and the year's donations and subscriptions to \$7,000. Because of the extraordinary demand on the institution donations are solicited.

THE NATIONAL COMMISSIONER OF EDUCATION has issued a report upon examinations of pupils for imperfections of eye-sight. Color blindness is more prevalent amongst boys than girls. Of optical affections the highest percentage is found amongst children of Irish, Swedish and German blood. The lowest is amongst those of American, French, Scotch and English extraction.

SMALL-POX PANIC IN SCRANTON.—The breaking out of small-pox at Kingston, Luzerne Co., Pa., has caused a panic through that section, which is in the very heart of the Wyoming coal regions. Close by are the mining towns of Luzerne, Maltby, Laskville, Edwardsville and Plymouth. Kingston lies between these places and Wilkesbarre, the county seat.

TYPHOID FEVER IN AN ORPHAN SCHOOL.—Reports from the Soldiers' Orphan School at McAllisterville, Juniata Co., Pa., confirm the rumor of the ravages of typhoid fever among the pupils of that school. It is known that a number of cases exist, and the number is estimated at from twenty-five to forty.

THE MEDICO-CHIRURGICAL SOCIETY OF THE DISTRICT OF COLUMBIA has elected the following officers for the ensuing year: Robert Reyburn, President; A. Tangusta, first Vice-President; P. P. Werner, second Vice-President; F. J. Shadd, Treasurer; J. R. Francis, Librarian; L. A. Harver, Secretary; and S. R. Watts, Corresponding Secretary.

DR. H. D. SCHMIDT, the distinguished pathologist, for many years connected with the Charity Hospital of New Orleans, died on Nov. 23.

THE NORTH TEXAS MEDICAL ASSOCIATION will meet in Sherman, Texas, Tuesday, Wednesday and Thursday, December 11th, 12th and 13th, 1888.

LOS ANGELES SEWERAGE, it is said, is now receiving the much needed attention of Dr. H. S. Orme, a member of the California State Board of Health.

"THE TONGUE" is the title of a new paper, edited by a New Jersey physician. Of course all the doctors will wish to see it.

DR. PERCIVAL H. FLYNN, of New York, died on Nov. 17 in consequence of an overdose of morphia.

A HOSPITAL FOR CONTAGIOUS DISEASES is to be built at Worcester, Mass.

ST. CLAIR COUNTY, Mich., urged to action by the recent small-pox scare at Sarnia, will build a new pest house.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from November 17, 1888, to November 23, 1888.

Lieut.-Col. Richard H. Alexander, Surgeon, is granted leave of absence for four months, by direction of the Secretary of War, to take effect from the date of his relief from duty as Medical Director Dept. Ariz. by Lieut.-Col. Joseph R. Smith, Surgeon. Par. 11, S. O. 268, A. G. O., Washington, November 16, 1888.

Lieut.-Col. Smith, after being relieved by Lieut.-Col. Alden, will report in person to the commanding officer Dept. of Ariz. for duty as Medical Director of that Department, relieving Lieut.-Col. Richard H. Alexander. Par. 10, S. O. 268, A. G. O., Washington, November 16, 1888.

Surgeon William E. Waters, Vancouver Bks., is granted leave of absence for one month, to take effect on or about the 1st prox., with permission to apply for an extension of one month. Par. 1, S. O. 129, Hdqrs. Dept. of the Columbia, November 9, 1888.

Lieut.-Col. Charles H. Alden, Surgeon, is relieved from further duty at the U. S. Military Academy, West Point, N. Y., and will report in person to the commanding General Dept. of Dakota for duty as Medical Director of that Department, relieving Lieut.-Col. Joseph R. Smith, Surgeon. Par. 10, S. O. 268, A. G. O., Washington, November 16, 1888.

By direction of the Secretary of War, Major Charles Smart, Surgeon, will proceed to Milwaukee, Wis., to represent the Medical Department of the Army at the meeting of the American Public Health Association in that city November 20 to 23, 1888, and upon the adjournment of the Association will return to his proper station. Par. 2, S. O. 268, A. G. O., Washington, November 16, 1888.

Capt. Richard C. Newton, Asst. Surgeon, is granted leave of absence for four months, by direction of the Secretary of War. Par. 16, S. O. 272, A. G. O., Washington, November 21, 1888.

By direction of the Secretary of War, the leave of absence granted Capt. Marshall W. Wood, Asst. Surgeon, in S. O. 257, November 3, 1888, from this office, is extended ten days. Par. 12, S. O. 270, A. G. O., Washington, November 19, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending November 24, 1888.

P. A. Surgeon A. C. Heffinger, ordered to the U. S. Str. "Kearsarge."

Asst. Surgeon Patrick H. Bryant, ordered to the Naval Hospital, Brooklyn, N. Y.

Surgeon Daniel McMurtrie, ordered to the U. S. receiving ship "Vermont."

Surgeon M. C. Drennan, detached from "Vermont" and to the "Atlantic."

Surgeon G. F. Winslow, detached from the "Atlantic" and placed on waiting orders.

P. A. Surgeon W. A. McClurg, detached from the "Tallapoosa" and to the "Kearsarge."

Asst. Surgeon L. L. von Wedikind, ordered to the "New Hampshire."

P. A. Surgeon A. C. Heffinger, detached from the "Kearsarge" and to the "Tallapoosa."

Surgeon B. F. Stephenson, detached from Navy Yard, Boston, and to the "Wabash."

Medical Director A. S. Oberly, ordered to the U. S. Str. "Richmond."

Surgeon W. H. Jones, detached from the U. S. Str. "Richmond" and wait orders.

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ORIGINAL ARTICLES.

REPORT OF FORTY-EIGHT CASES OF ALEXANDER'S OPERATION.

Read before the Section on Gynecology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY J. H. KELLOGG, M.D.,
OF BATTLE CREEK, MICH.

Since October 29, 1886, I have made the operation of shortening the round ligaments forty-seven (sixty-nine times, Nov. 28, 1888) times. The purpose of this paper is to give a brief summary of the immediate, and so far as determined, the remote results of the operation, some observations respecting the nature and purpose of the round ligaments, a description of a new and simpler mode of operation which overcomes the difficulty of finding the ligaments in certain cases, indications for the operation, and suggestions respecting the after-treatment of cases in which this operation has been performed.

Of this series of cases, the first twelve were reported in a paper presented at the last meeting of this Association. Another report of the first twenty cases of the series was made in a paper read before the Gynecological Section of the International Medical Congress.

The following is a classified statement of the whole series of cases, as regards local conditions for the relief of which the operation was performed:

Retroversion or retroflexion, with prolapse of one or both ovaries, 39 cases.

Complete procidentia, 4 cases.

Prolapse of ovaries, 3 cases.

Anteversion, 1 case.

RESULTS IN 39 CASES OF RETROVERSION AND RETROFLEXION.

Of these cases, nearly one-half of which were operated upon more than one year ago, four have been operated upon within three months, and although they promise exceedingly well, they cannot yet be considered as permanent successes. Of twenty-six of the remaining cases, I will say nothing more than that with one exception the patients are well, that the uterus and ovaries are in normal position, and that the symptoms for

which the operation was performed have disappeared, and show no evidence of returning. In one case the operation is an anatomical success, but the patient still suffers from various local pains, which I believe to be of a neuralgic character. Each of the remaining cases, which were not wholly successful, I will notice in detail, as the unsuccessful cases are those of the greatest interest in the history of any new operation.

Miss B. Condition: sharp, rigid retroflexion, uterus double normal size, cervix just within the ostium vaginae, ovaries enlarged and prolapsed. Operation restored uterus and ovaries to proper position, but the intra-uterine stem occasioned great pain and frequently recurring epileptic seizures, so that it was removed on the third day. Two months after the operation, the uterus was retroflexed, but not so much so as before. The ovaries were out of reach, and the uterus was held well forward. The patient went home without a pessary. Was free from epilepsy for several months. Worked hard in caring for an entire family of sick persons, relapsed, and is now little better than before the operation. I think a posterior colporrhaphy should have been performed, and that the patient should have worn a pessary. This case was the second one operated upon and I had at that time more confidence in the sustaining power of the ligaments than I now have.

Mrs. V. Condition: retroflexion, prolapse of ovaries, and distressing reflex symptoms. The sixth case operated upon. Found ligament upon right side, but failed to draw it out. Closed wound and did not operate upon the other side. Patient is neither better nor worse than before the operation.

Miss L. Retroflexion and ovarian prolapse, the result of subinvolution. Uterus and ovaries restored to good position, but when the patient got upon her feet a small hernia appeared upon the right side. Closed this by a subsequent operation. Patient went home too soon. After a few weeks reported little relief from the operation. Has not been heard from for several months. The ligaments in this case were very small.

Mrs. M. Retroversion and prolapse of ovaries. Ligaments extremely slender. One parted in the attempt to draw it out. A week after the operation, found uterus retroverted. A week later, the

uterus was in normal position. Patient went home soon after the operation. Uterus remained anteverted without artificial support for three months, the patient being well enough to engage in ordinary household duties, and greatly better than before the operation. Allowed the bowels to become very constipated. Strained violently at stool during three or four weeks. Came back for examination. Found uterus partially retroverted. Adjusted a lever pessary, applied electricity daily for three weeks and patient was greatly improved. Uterus remained in position for several hours without artificial support, while before operation the organ became retroverted after replacement as soon as the patient stood upon her feet, unless supported artificially. Patient went home wearing a lever pessary without discomfort, which she could not do before the operation. Considering the disadvantages surrounding this case, I think the operation did fairly well. This was one of the first cases operated upon.

Miss B. Retroversion and prolapse of ovaries. One ovary considerably enlarged. Organs restored to good position by the operation. Patient became homesick and went home soon after the operation. Organs in good position when last seen. Patient not relieved of pain at menstrual period, though pain was less severe than before the operation. Present condition I have been unable to learn.

Miss R. Retroflexion, prolapse, and enlargement of ovaries. Had repeated attacks of cellulitis. Constant ovarian pain. In bed most of time, very weak, anæmic, and suffered extremely at menstrual periods. Ligaments were very slender, and a month after the operation uterus was found slightly retroverted. Ovaries in good position. A lever pessary was placed and worn without discomfort. Since operation patient has had no pain in ovaries, no pain at menstruation, has gained 44 pounds in weight, and is able to walk four miles without inconvenience. She pronounces herself in perfect health, and gives the credit to Alexander's operation. So the case can hardly be regarded as a failure, notwithstanding the inability of the ligaments to hold the uterus in perfect position. I attribute the improved condition of the patient to the restoration of the ovaries to their proper place, which could not have been accomplished in any other way I am acquainted with.

In three other cases I have had a similar experience as regards the failure of the ligaments to hold the uterus perfectly in position. These were all cases of retroflexion, in which the intra-uterine stem gave pain or created so much reflex disturbance as to necessitate its removal. The ovaries were well held up, however, in each of these cases, and serious reflex disturbances, as nausea and vomiting at the menstrual period, or after, disappeared after the operation and have not returned.

A pessary can now be worn without inconvenience, although before it could not be tolerated for twenty-four hours. These cases may fairly be regarded as at least partial successes. In summing up the results of thirty-nine cases of retrodisplacement and ovarian prolapse, I may say that twenty-six were wholly successful, seven were improved, and only two were total failures, four being yet undetermined. I hope to have the opportunity to operate again in one of the cases of complete failure, and believe success may be secured.

RESULTS IN 4 CASES OF PROCIDENTIA.

Mrs. R. Complete procidentia of seven years' standing. I had temporarily relieved the patient three years before by a posterior colporrhaphy, but after a second child-birth, the difficulty returned. Operated October 29, 1886. Found ligaments very slender, but the uterus and ovaries were held well in place. Patient went home in six weeks, against my protest, and in spite of my earnest advice, would not wear a pessary. Remained well, notwithstanding, with uterus in good position, for six months, or so long as she took good care of herself. Then the patient engaged in business which required her to be much upon her feet and the old condition soon gave evidence of returning. The patient now reports herself about as bad as before the operation. The patient should have had the posterior colporrhaphy repeated, should have worn a pessary, and should have remained under medical care for a few months after the operation.

Mrs. N. A case of complete procidentia, enormous rectocele and cystocele. Uterus could not be retained by any sort of pessary except an inflated ball, or a pessary with an external support. Found ligaments large, but could not draw them out more than $2\frac{1}{2}$ inches. Organs seemed to be well held up after operation, and all went well for several weeks, when, in straining at stool, the patient forced out the vaginal walls. The fundus was not tilted backward, but the cervix seemed to slide down under the arch of the pubes. The rectocele and cystocele which formerly existed, were but partially reproduced. I desired to perform a colporrhaphy, but the patient thought she would do well enough without it, since the uterus was held well in place by a small inflated ring pessary. The patient's condition is still about the same. Some slight improvement. Patient does not consider the operation a success though her condition is evidently anatomically better than before.

I believe that both the above cases would have been entirely successful if the proper supplementary operations had been performed. I now refuse to operate in cases of this sort unless the patient will agree that all the operations necessary may be performed.

Two other cases of the same sort operated upon more recently, in which the shortening of the ligament has been supplemented by a thorough colporrhaphy, have yielded most excellent results.

RESULTS IN 3 CASES OF OVARIAN PROLAPSE.

In the first case, Miss M., the uterus and ovaries lay in the hollow of the sacrum. The uterus was sharply anteflexed, various sorts of pessaries had been tried and either could not be worn or did no good. In operating, found the ligaments very slender indeed. One was broken. By the shortening of one ligament the fundus was drawn forward, where it has remained. The patient is relieved to a great degree of the pain which she formerly suffered after menstruation, and can wear a small lever pessary, which affords her great relief from backache and other local discomforts.

In two other cases the uterus was anteflexed, otherwise in good position, but both ovaries were prolapsed. In each case one ovary was much enlarged. The ovaries are now in normal position and no enlargement is perceptible. Tenderness and pain in the ovarian region have disappeared. Two of the three cases may be regarded as completely successful, one partially so.

RESULTS IN A CASE OF ANTEVERSION.

Patient, Miss M., aged 33. Complete anteversion. Lower border of fundus was below the arch of the pubes. Patient suffered all the inconvenience usually accompanying this condition. Operation May 31, 1887. Shortening the ligaments, lifted the uterus backward and upward fully 2 inches, where it has remained since the operation. Patient is wholly relieved and enjoys excellent health. Is a laboring woman and works steadily. Has done so for several months. Enjoys good health in every respect. No pessary or artificial support of any kind has been worn since the operation.

Summing up the results of the whole forty-seven cases, I find as follows :

Complete success in 29 cases.

Improvement in 9 cases.

Failure in 3 cases.

Undetermined, but promising excellent results, 6 cases.

I do not think the operation could fairly be considered at fault in either of the three cases of failure. In one case failure was due to want of skill or experience, or the faulty mode of operation, it being one of my first cases, and the old method being employed. Of the other two cases one was due to neglect of proper after-treatment and overdoing on the part of the patient. In the third case failure was due to want of a colporrhaphy. In at least half of the cases in which only improvement was secured, I am confident that with better after-management much better results might be secured. But that the operation

fails in some cases, even when it is an anatomical success, is not a proper ground for condemnation. The same is true of many other surgical procedures. Leaving the undetermined cases out of consideration, I find the failures to be only 7 per cent., while improved cases are 22 per cent., and complete successes, 71 per cent. of the total number operated upon. This is certainly not a bad showing for a new and yet undeveloped operation.

The general skepticism respecting the value of this operation, will, I think, justify me in introducing a few extracts from letters received from patients in response to a circular letter sent out to those upon whom the operation had been performed from six to eighteen months previously. The following is an abstract from a letter from Miss R., whose case I have put down as only a partial success, as the ovaries could still be felt after the operation, though the uterus was placed in good position :

"I feel that I must write and tell you how perfectly well I am. In fact, all my friends look upon my recovery as almost a miracle. Pains and backaches are things unknown to me now. I walk at least a mile every day, and often three or four, and have gained 46 pounds since the operation. I shall be down in a few weeks for an examination to make sure that I am all right. Must say again, I feel simply 'elegant.'"

[Since this paper was written this patient has called upon me, and upon examination I find both uterus and ovaries maintained in good position without a pessary and the patient enjoying absolutely perfect health. No local tenderness anywhere, so that this case was after all a complete success anatomically as well as therapeutically.]

The following letter from Mrs. D. speaks for itself :

"On the 13th day of April, '87, you performed for me the Alexander operation at the Sanitarium, and now enough time has passed to know something of its effects. My good health is a marvel to both myself and my friends. I am so well, so strong, so happy in my good health; and my heart is so full of gratitude to you for the good received at your hands. I am growing stronger all the time, thereby proving your words to be true (that I would not feel all the good effects of my operation for a year). My husband thinks that the money spent is the best investment we ever made. This reads something like the testimonials we read in the patent medicine almanacs, but I don't mean it that way, for I do this of my own free will, because I am so thankful for my good health that I must tell you so."

The following letter is from Mrs. M., who had suffered for many years from retroversion, and flexion and prolapses of the ovaries. Operation was performed about six months previous to the date of her letter, written March 18. She still remains in excellent health :

"In answer to your letter of inquiry of March 12, I reply as follows to your questions in the order in which they are asked:

"1. I am well pleased with the results of the operation.

"2. I think I can safely say I am relieved of all the symptoms I suffered before the operation.

"3. I have had no examination by another physician, and have no means of knowing the present position of the organs. I only judge from the health I enjoy that they occupy their proper position.

"4. I do not suffer from any inconvenience which I did not experience before the operation.

"5. I believe the operation has made me a well woman. I have not enjoyed as good health for several years. I am doing the work for my family of seven except the washing and ironing. I feel that I am able to do that also, but my husband thinks I had better wait a while longer.

"I can hardly express the gratitude I feel daily for the benefit I received from the operation."

A few days after the above was written I examined this patient and found her well, with uterus and ovaries in normal position, and in a healthy condition.

In preparing this paper for the press, I am able to report another case which I have had opportunity to examine since the paper was written, the case of Mrs. N., one of the two cases of procidentia which were reported as failures. I found that the uterus was held forward in good position, and that it had never been down since the operation as formerly, although there had been a protrusion of the vaginal walls. This was much better than I expected, as I supposed by reports from the patient that the uterus had fallen down as before. A small hernia which followed the operation, had nearly closed, and the operation could fairly be called at least a partial success. By the aid of a proper colporrhaphy, I feel confident that the success might have been made complete.

I give below a copy of a letter from Dr. Alexander, received since this paper was written. The letter relates to the case of Miss Y., of Liverpool, England, who consulted me for epilepsy and general ill-health. On examination, found retroversion with prolapse of ovaries. As the epileptic seizures occurred most frequently and severely at the menstrual period, and the patient suffered from the usual pains and inconvenience accompanying retroversion and ovarian prolapse, I performed Alexander's operation, hoping that both the local condition and the nervous disorder might be thereby relieved. After returning to her home, the patient consulted Dr. Alexander, who reported as follows:

Liverpool, Eng., May 21, 1888.

Dear Sir: I have just had the opportunity of examining Miss Y., one of the cases upon

which you have performed the operation that goes by my name. It is with extreme pleasure that I can report the uterus and its appendages as perfectly normal in position and character, and an improvement in all the symptoms, as Miss Y. will describe herself. I congratulate you on the success, and I hope the fits will lessen in time also. But these probably depend on menstruation itself. I am very glad to find from your letter, that you are finding the operation to be a boon when performed in suitable cases.

With kind regards,

Yours very sincerely,

W. ALEXANDER.

OBSERVATIONS RESPECTING THE NATURE AND PURPOSE OF THE ROUND LIGAMENTS.

The fact that the round ligaments are usually found in a relaxed condition, having a slack of from one to two inches, has led to the supposition that they have little to do in sustaining the uterus in its normal position in the pelvis. Indeed, the view has been advanced by some gynecologists that the round ligaments are of no value except as the morphological representatives in woman of the analogous structures in the male. Indeed, in a discussion which occurred in the Gynecological Section of the last International Medical Congress, a professor of gynecology from Canada declared that a large number of dissections which he had made, together with his experience with the operation, had convinced him that these structures were wholly absent in one-half of the women of that country. In reply to the assertion respecting the poverty of Canadian women in round ligaments, it is only necessary to state that Dr. Alexander, of Liverpool, who, at last accounts, had performed this operation nearly ninety times, has never once failed to find the ligaments. In the 47 [69] cases in which I have operated, I have failed in only a single instance, one of my earlier cases, in which I operated by the old method, cutting down upon the external ring. I abandoned the case after operating upon the right side, suspecting that my failure was due to inability to cope with peculiar circumstances—which greater experience might enable me to overcome. I am now fully convinced that my suspicions were correct, and that I had the ligament, but failed to draw it out. I hope to have the opportunity sometime of operating upon this patient again.

In two other of my earlier cases, I had the misfortune to break a slender ligament on one side, although in both cases the remaining ligaments were of sufficiently good size to secure a very considerable degree of improvement in the patient's condition.

Omitting from the enumeration the case upon which I operated upon one side, and adding my forty-six cases to those of Dr. Alexander, we

have a series of more than one hundred and twenty-nine cases, in every one of which both ligaments were present. For my own part, I should as soon expect to find about as many women wanting in ears, eyes, or ovaries, as lacking in round ligaments. I am thoroughly satisfied that these organs are among the most important of the sustaining structures of the uterus. Dr. Alexander sagaciously suggests that while the round ligaments are not continuously in action, they serve a most essential purpose in performing for the uterus the same function served a vessel by its "mooring ropes." While not sustaining the weight of the organ, they prevent its making too extensive excursions downward or backward during such acts as coughing, heavy lifting, jumping, straining, micturition, and defecation.

Strong contractions of the diaphragm and abdominal muscles during coughing, straining, and lifting, crowd the uterus downward into the pelvis with very considerable force. I have endeavored to measure this force by means of a mercurial gauge connected with an air pessary placed in the vagina and filled with water, and found it to be equal to one to four inches of mercury, equivalent to one-half to two pounds per square inch. The descent of the uterus, unless it is strongly anteverted, inclines the fundus backward more and more as the uterus descends along the curve of the pelvis. Without the restraining influence of the round ligaments, there is nothing to prevent the uterus from becoming retroverted from very slight causes, so if these structures were not present, we should find retroversion to be the normal condition of the uterus instead of anteversion. The purpose of the round ligaments is not to sustain the uterus, but, acting through the internal abdominal rings as ropes running over pulleys, they prevent the uterus from being forced so far backward as to allow the intestines, which normally lie behind the fundus of the uterus, to crowd in between the uterus and the bladder, thus producing a permanent backward displacement.

This action of the round ligaments I need not dwell upon, as Dr. Alexander has very clearly and forcibly demonstrated the correctness of this view in his monograph upon this operation, but I wish especially to call attention to what I suppose to be a new observation respecting the action of these ligaments. To perform the function of "mooring ropes," the round ligaments need to be nothing more than fibrous cords. This, indeed, seems to be the general opinion respecting their structure. The following observation proves them to be much more than this, namely, active muscular structures; which is exactly what we should expect to find, considering the matter from a theoretical standpoint, since analogy would give to the round ligaments a structure corresponding

to the cremaster muscle of the spermatic cord.

Having entertained some thoughts of this sort, I made the following experiment upon a case: After cutting down upon the round ligament, and carefully freeing it from the surrounding structures, I drew it out to the full extent, so that the fundus of the uterus was brought close up to the anterior abdominal wall. The ligament was sufficiently detached from the structures of the canal to run freely back and forth without tension upon any of the surrounding structures. I then applied electrical stimulus in each of the following ways:

1. The outer end of the round ligaments, after having been separated from its attachment, was held by an assistant 2 or 3 inches from the surface of the body, and in such a manner that it was not put at all upon the stretch. One pole of the battery was connected with a large flat sponge, placed upon the abdomen 4 or 5 inches above the wound. The circuit was closed by touching the ligament with the other electrode, which consisted of a small copper wire with a bit of absorbent cotton wound about the end and moistened. Immediately on making contact with the ligament, a very distinct contraction occurred, which involved not only the abdominal muscles, but the ligament itself. This was shown by the fact that the ligament was not simply drawn into the wound, but shortened during the contraction.

2. With one electrode placed in the vagina the result was the same, only the contraction was restricted more closely to the ligament and the muscles in the immediate vicinity of the ring.

3. To be doubly sure that the contraction of the ligament was not due to the structure being dragged in by contraction of the abdominal muscles, I carefully isolated the ligament from the body for the length of about 4 inches, and then applied the electrical current by making contact at two points upon the ligament itself about 2 inches apart. There was distinct contraction and shortening of the ligament, with contraction of the abdominal muscles.

4. To make the observation still more positive, I cut off about 2 inches of the ligament, laid it upon a warm, moist towel, and applied wire electrodes to either end. The ligament had been exposed to the air for some time, and had been considerably bruised in drawing it out. Still, slight though very distinct contractions were obtained.

5. I afterwards subjected the portion of the ligament removed to microscopical examination, and found imbedded in its structure large bundles of voluntary muscular fibres. I did not have my stage micrometer at hand at the moment of examination but, comparing the width of the fibres with the diameter of the red blood corpuscles by means of a camera lucida, I determined their width to be about $\frac{1}{8}$ of an inch. For some weeks before examination, the structure had been preserved in a bichromate of potash solution.

In making the tests, I employed three forms of electrical current—using a galvanic current of about 6 milliamperes, the faradic current, and a reversing current obtained from a small dynamo. Much the most distinct and vigorous contractions were obtained from the last named current. My first purpose, indeed, in making the observation, was to ascertain the influence of this current upon the round ligaments, as I had found it to be a most efficient agent in stimulating muscular action in other parts of the body. I think it may fairly be inferred from the above observation that the round ligaments are active as well as passive in their function. In other words, they not only act merely as tendinous cords to prevent too great displacement of the uterus, but, when made taut by downward or backward displacement of the uterus, they aid in restoring the organ to its normal position by contracting, and thus lifting it forward. Indeed, their action is probably still more positive in the prevention of downward displacement, since the voluntary muscular fibres of the round ligaments contract simultaneously with the abdominal muscles in such actions as coughing, straining and lifting, so that the slack which is found to exist in post-mortem dissections is doubtless taken up, and the top of the fundus tilted forward at the same moment that the downward pressure is brought to bear, thus diverting the current of downward action toward the hollow of the sacrum and behind the uterus. Is it not on account of this beautiful arrangement of reciprocating muscular action that the hardy women among the peasantry of Continental Europe, as well as the female members of most barbarous tribes of human beings, are enabled to compete in physical endurance with men living under similar conditions? Their well developed round ligaments antagonize the displacing influence of other muscles in such a manner as to protect them from the disorders and malpositions of the uterus to which women of feeble muscular development, and consequently with slender and inefficient round ligaments, are so notoriously subject. In the 47 [69] cases upon which I have operated, I have invariably found the round ligaments large and well developed in women who have from early life been accustomed to such active physical exercises as are calculated to produce a good physique and well developed muscular system; while in women whose habits had been habitually sedentary, or who from early life have had their bodily movements so restricted by tight corsets as to prevent freedom of movement in the muscles of the lower part of the body, I have invariably found the ligaments slender and weak.

A SIMPLE AND IMPROVED METHOD OF OPERATION.

In my first twenty-seven cases, the operation was performed by cutting down upon the external ring as described by Dr. Alexander. In the last

twenty cases, adopting Dr. Alexander's more recent suggestion, I made the incision a little higher up, opening the canal at a point about $\frac{1}{2}$ inch above the border of the external ring, by a division of the intercolumnar fascia. I never find it necessary to make the external incision more than an inch in length. After cutting through the skin, I catch up the underlying structures on either side with snap forceps, and divide the tissues with knife or scissors down to the tendon of the external oblique muscle. Placing the end of the left finger in the wound, I locate exactly the external ring, then draw back the sides of the wound with retractors in such a way as to expose the dark line which marks the location of the intercolumnar fascia. A slight incision is made through the fascia, 3 or 4 lines in length. Taking a strabismus hook in each hand, the opening through the fascia is made to gape by drawing one side back with the hook in the left hand, while the round ligament with its investing fascia is hooked up with the right. In order to secure the round ligament, it is only necessary to adopt the following procedure:

Passing the hook down on the outside of the grayish mass which is seen through the opening in the fascia, press this mass a little toward the center of the body and push the hook down to the lower part of the canal, half or three quarters of an inch below the level of the tendon of the external oblique. Turning the point of the hook inward, a mass of tissue is easily secured and brought out through the opening in the fascia, which will usually be recognized at once by its grayish color and the great number of anastomosing blood vessels as the structure containing the ligament. It is of great importance that the wound should be wholly free from blood, and the dissection a clean one, as by this means only will the natural color and appearance of the structures of the ligament be so preserved as to enable one to identify them. The structures hooked up usually consist of the ligament surrounded by a sheath of fascia, with its accompanying nerve and blood-vessels. To make sure that the ligament shall not escape back into the canal, from which it is not always easy to recover it, I slip a thick carbonized silk thread underneath the whole mass by means of an aneurism needle. The ends are tied together or secured by a pair of snap forceps. The next step in the operation is to carefully enucleate the ligament from the membrane surrounding it, which is easily done by the aid of a strabismus hook. On making a longitudinal slit in the fascia, the smooth, glistening surface of the round ligament is usually readily discovered, and the process of enucleation may be completed in a few minutes. In exceptional cases, the ligament, even at this point, proves to be a mere tendinous thread. On this account, great care should be taken not to sacrifice any chance for securing the

ligament by cutting or breaking off any of the fibres which dip down into the canal toward the internal ring. By repeated trials, even in the most unpromising cases, a fibre will at last be found which, when pulled upon, does not drag upon the borders of the ring to which the fascia surrounding the ligament is attached. Drawing this outward, the operator will be gratified by seeing a smooth, glistening cord emerging from the wound in the direction of the internal ring. Carefully seizing this with the thumb and finger, a little steady traction will bring the ligament fully into view. The ligament may now be dropped into the wound, being still secured by the loop of silk. Place in and over the wound a mass of absorbent cotton, saturated with four thousand solution of mercuric bichloride. After securing the ligament upon the opposite side in the same manner, both the ligaments should be drawn out to the extent of three to five inches. The pouch of peritoneum which forms the canal of Nuck will be seen gradually separating from the ligament as it is steadily pulled forward.

The next procedure is the placing of the silver wires, which should be passed through the tendon of the external oblique, crossing the inguinal canal, and including at least one-half the thickness of the round ligament. Special care should be taken to include in the silver sutures the pouch of peritoneum investing the ligament. I have found two silver sutures to be sufficient. The slit in the inter-columnar fascia is now closed by two or three carbolized silk sutures. At least two of these are also made to include the ligament. Before tying the last suture, the outer portion of the ligament is tucked into the outer end of the inguinal canal. If the ligament has been greatly bruised, however, or if vessels have been tied, so that its nutrition is cut off, the ligament should be brought out through the lower angle of the wound. This is very rarely necessary, if the operator is skilful. The deep and superficial fascia are now carefully brought together by a continuous suture of small chromicized catgut. The skin is united in a similar manner, the silver sutures twisted, and the operation is completed.

In dressing the wounds, I cover them thickly with a mixture of equal parts of iodoform and sub-carbonate of bismuth. Over this is placed a quantity of iodoform charpie, then a thick layer of sterilized cotton, and a snug body bandage, secured by perineal bands, is placed over all. The uterus is supported in position by a lever pessary, which is fitted before the operation. If necessary, this is held up by the hand of an assistant, during the securing of the ligaments by sutures. In cases of retroflexion, the fundus must be held forward by means of a sound, and afterwards kept in place by a stem pessary, unless the flexion is a rigid one, in which case rapid dilatation should be performed before the operation upon the liga-

ments, and a stem pessary placed in position. I have had made a self-retaining stem which I find useful in these cases.

I have operated by this method in 20 [42] cases, and have secured immediate union in every case. Great pains is of course taken to make the operation thoroughly antiseptic. The patient receives a shampoo and is shaved some hours before the operation, and a compress wet with one to four thousand bichloride solution is applied to the parts concerned in the operation. All assistants and nurses, as well as the operator, are required to wear, while in the operating room, large gowns which have been well sterilized by boiling or fumigation. The operator and all who handle instruments, disinfect the hands first by thoroughly scrubbing with hot water and laundry soap, then washing with alcohol or ether, and finally soaking for a minute in a $\frac{1}{2}$ per cent. bichloride solution. The wounds are kept continually moistened by frequent sponging during the operation with one to four thousand bichloride solution.

With the exception of one case, 100.6° F. is the highest temperature shown by any case operated upon in this manner, (now twenty in number,) and the temperature has reached 100° F. in only a few instances.

Another advantage of this simple mode of operation is that it can be performed without ether. The incisions are so small, usually only just large enough to admit the end of the finger, that cocaine answers all requirements for anaesthesia. In my last 18 [40] cases, I have used ether but twice. The patients complain of no pain except for a few seconds at the last, when the ligaments are being drawn out. I usually inject fifteen or twenty minims of an 8 per cent. solution of cocaine under the skin along the line of the first incision, four or five minutes before beginning the operation. No more cocaine is required, as a rule, until the deep fascia is reached. A few minims are dropped over the deep tissues before making the last incision. A few minims more are injected into the inguinal canal before picking up the ligament, and again the needle of the syringe is passed into the canal in the direction of the internal ring, just before drawing the ligaments out. The total amount of cocaine used in a case is usually three to five grains.

Another advantage in the use of cocaine is the fact that the patient is not troubled by subsequent vomiting, as when ether is used. The pain occasioned by the pull upon the ligaments in the straining of a single spell of vomiting after ether, is much greater than the entire amount of pain ordinarily suffered during the operation under cocaine. Patients frequently read a newspaper or a book, or converse jovially with friends during the operation, and declare that they should not be aware from the sensation that any operation was being performed. The great safety of this

operation when performed antiseptically, the little pain involved in it, and the elimination of the small danger involved in the use of ether, by the employment of cocaine, certainly commend to the consideration of gynecologists the question whether so safe and simple a procedure is not greatly to be preferred to dependence upon pessaries, which, at the most, are, with rare exceptions, merely palliative, and are not infrequently attended by great distress and inconvenience on the part of the patient who resorts to their use.

After the operation, the patient is put to bed, a vaginal douche is administered every four to six hours during the day, and one during the night if the patient suffers pain. A narcotic is rarely required. The use of a catheter is seldom necessary, as the patient evacuates the bladder without straining while taking the douche. Before the operation, the patient's bowels are thoroughly evacuated by means of an aloine pill given the night before the operation, and a saline laxative the next morning. The bowels do not move after the operation for two or three days, and then are kept loose by castor oil or some similar laxative. Defecation is aided by warm water enemata, so that no straining is allowed. The silver sutures are removed the seventh or eighth day, until which time the dressings are not disturbed. I never use drainage tubes, and see no necessity for their use in this operation. The patient is kept in bed for three or four weeks after the operation, receiving daily massage and general faradization.

At the end of one month, the patient is allowed to get upon her feet, and a course of treatment is begun for the purpose of preventing a relapse into the former condition. Alexander's operation is not to be considered as a radical cure of any form of uterine displacement, but only as a most efficient aid to other means. It restores the uterus to its normal position, and gives it, so to speak, a new chance to stay there if it can. Whether or not it will remain in the position to which it has been restored, depends upon whether other normal conditions, causative and resultant, are or may be removed.

When may Alexander's operation be advantageously employed? In answering this question from the results of my own experience, I should say:

1. That the greatest utility of this operation is in cases of retroflexion and retroversion of long standing, and especially cases in which the uterine displacement is accompanied by prolapse of the ovaries, making the wearing of a pessary painful or intolerable. I think it not improper, however, that a woman who is found to be suffering from retroversion or flexion, without any ovarian complication, should be given an opportunity to choose between an operation which restores the uterus to its normal position, and gives it a fair prospect of remaining in this condition, and many

years, or a lifetime, of dependence upon a pessary, and possibly also upon a specialist to inspect, adjust, and change the supporter to suit varying conditions from year to year.

2. Cases of procidentia, provided the operation is supplemented by other necessary operations, as posterior or anterior colporrhaphy, or both. I am satisfied that much of the prejudice against this operation which exists among physicians is the natural result of too great confidence felt in the operation and the extravagant claims made for it by some of those who were among its early advocates. I think it is now pretty well agreed that Alexander's operation affords only a temporary relief to the subject of complete procidentia unless proper supplementary operations are performed. I have devised a modification of the posterior colporrhaphy of Simon which I find very successful in these as well as other cases requiring a posterior colporrhaphy. The operation consists in the removal of a strip of mucous membrane of proper width upon the posterior wall of the vagina, extending from the labia to a point an inch below the level of the cervix, when the latter is held in its normal position. The inner end of the denuded surface is continued laterally on either side by extending the denudation one-third the circumference of the vagina each way from the median line. Beginning at the apex of each of these cornua, the denuded surface is closed up, first by buried sutures, then by a continuous suture uniting the edges of the mucous membrane. By this means, not only is the vagina narrowed, but a thick strong raphe is made running along the posterior wall, forked at its inner end. The forked end forms a pouch into which the cervix drops, and being prevented from further descent, the action is to tilt the fundus forward, thus aiding the action of the round ligaments. An anterior colporrhaphy is also performed when there is much anterior bulging. I find the use of the buried suture of great advantage in this operation as well as the form given the denuded surface. This mode of procedure may be old to others, though new to me. I have taken the liberty to describe it thus briefly in this paper, as I believe a colporrhaphy to be equally as important as Alexander's operation in all cases of procidentia, and also in cases of retroversion attended by vaginal subinvolution; and in the dozen cases in which I have used this method, I have found the results much more satisfactory than other methods which I had previously employed.

The expectation from Alexander's operation is not that the ligaments will permanently hold the uterus up, but that they will hold it forward for a sufficient length of time to allow the pelvic contents to rearrange themselves in normal positions; and if the natural supports of the organ can at the same time be restored, a cure will be accomplished; otherwise the patient will assuredly drift back, in

time, into the old condition. It is not the normal function of the round ligaments or muscles to sustain the uterus; but we have shown by experiment that their strength is amply sufficient to enable them to be used temporarily for this purpose. Nevertheless, no intelligent gynecologist would think of depending upon these frail muscular bands as a permanent support for both the uterus and a large part of the abdominal contents. I speak of this, not for the information of this audience, but as a defense against damaging impressions which I have found existing among physicians that Alexander's operation is claimed by its advocates to be a radical cure for procidentia and all its grave consequences.

3. As at least third in importance, I should rank the utility of this operation in the restoration to proper position of enlarged and prolapsed ovaries, when painful and a cause of serious reflex or local disturbance, irrespective of the position of the uterus itself. In forty-two of the forty-seven cases upon which I have operated, the ovaries have been prolapsed. In fifteen of these cases one or both prolapsed ovaries has been very much enlarged. In two instances the enlarged ovary was as large as a very large egg. In every instance, with barely two exceptions, the prolapsed ovaries have been so perfectly restored that they could not be felt in vaginal examination after the operation. The rescue of this sensitive organ from its perilous position—crowded down behind the uterus, exposed to the pressure of hardened feces and the jar of every misstep in walking, as well as the passive congestion due to the mechanical obstruction to its circulation, and its restoration to its normal and protected position, is in itself the first step, and the most important step, toward the restoration of the ovary to a normal condition in other respects. I am convinced that a very large part of the good results which I have seen from this operation should be attributed to the restoration of the ovaries to their normal position, rather than to the change in the position of the uterus.

The existence of ante flexion or anteversion is not a contraindication for the operation, at least in my experience, if needed for the restoration of a prolapsed ovary. I have operated twice in cases in which this condition existed, without in the least degree aggravating the anterior displacement; and although it has been my uniform rule in operating to draw the ligaments out as far as possible without undue force, I have not produced a harmful degree of anteversion in a single instance.

4. I offer, as a fourth indication for this operation, extreme anteversion of the uterus when the patient suffers much from bladder disturbance. The results in the one case of this sort, first reported at the last meeting of this Association, have been all that could be desired, and I see no

reason why equally good results may not be obtained in other cases.

The operator who wishes to succeed with Alexander's operation, must not consider that when the operation is done, every thing has been accomplished. The shortening of the round ligaments should be regarded simply as a procedure for securing conditions favorable for the success of other means of treatment, which, without it, could not be permanently successful. I will briefly summarize what I believe to be the most essential features of the successful after-treatment of cases of this sort:

1. After the operation for the shortening of the ligaments, and the colporrhaphy or perineorrhaphy, or both, in cases requiring these operations, have been performed, a suitable pessary should be worn for six to twelve months, so as to remove all strain from the uterine ligaments and give them an opportunity to shorten, and prevent the round ligaments from being stretched to their original length. In my earlier cases, not appreciating the full value of the pessary in the after-treatment of these cases, I failed to obtain the best results in some cases which I believe would otherwise have been entirely successful.

2. The use of the vaginal douche for several months following the operation, I consider a very important means of aiding the contraction of the uterine ligaments and the return of the uterus and ovaries to their normal condition. Medicated pledgets of cotton may also be advantageously employed in many cases.

3. Another measure which I consider one of the most important of all in securing such a degree of improvement as will insure the patient against a speedy relapse into the former condition, is the correction of faulty modes of dress. It is not simply necessary to discard the corset, as I am satisfied that tight waist-bands and heavy skirts do more harm than do corsets. I have met many cases in which women who had discarded corsets, have injured themselves greatly by wearing numerous heavy skirts, drawn tight, and hanging upon the hips and lower abdomen. Skirt suspenders do not wholly remedy this evil, unless the skirt and dress bands are very loose; and every experienced physician knows that the average woman does not know when her clothing is loose. My rule is to make the patient take a full breath when the skirts and skirt-bands are loosened, take a measurement of the waist while the breath is held, with the lower portion of the chest expanded as much as possible, add one inch to this measurement, and adopt this as the standard measurement for skirt-bands and all clothing about the waist. I have made some measurements of the amount of downward pressure produced by corsets, waists, skirt-bands, and other articles of clothing, and in one instance found the column of mercury raised to twenty

inches during forced inspiration. This means a pressure equal to ten pounds per square inch. With such a pressure as this bearing downward upon the uterus and other pelvic organs, no permanent gain could be hoped for by means of Alexander's or any other operation, unless it be that of attaching the fundus of the uterus to the anterior abdominal wall.

4. Lastly, as another most important means for the prevention of a relapse into old conditions after this operation, may be mentioned electricity and massage, and such special active and passive exercises as will strengthen and develop the abdominal muscles and the normal supports of the uterus and other pelvic viscera. For a dozen years, I have employed electricity extensively in the treatment of uterine displacements of various sorts, sometimes with very satisfactory results, at other times without apparent effect in the direction of the improvement of displacements. Combining this agent with Alexander's operation as a supplementary therapeutic means, affords a more favorable opportunity for good results.

I have employed different forms of currents, the faradic current, the slowly interrupted galvanic current, the galvanic and faradic currents combined, and the dynamic current. The latter current, supplied by a small machine giving a reversing current, I have found the most effective of all means of stimulating contraction in the muscular structures which support the uterus. When one electrode is placed upon the abdomen and the other in the vagina, energetic and painless contractions are produced in the abdominal muscles, the sphincter muscles of the rectum and vagina, and the other muscular structures within the pelvic cavity. Experiments made with this current on a patient under ether and with the round ligaments exposed and isolated, showed contraction of these structures also when the electrodes were applied as indicated. If it be true, as has been suggested, that other of the ligaments of the uterus as well as the round ligaments, are to a considerable degree, muscular in their structure, I deem it wholly probable that these also participate in the contraction. These contractions occur at every reversal of the current, so that this current not only has the effect to stimulate nutritive changes in the diseased structures, but also affords a most valuable means of securing functional activity in idle and relaxed parts, thus giving them the benefit of a genuine gymnastic exercise. The therapeutic results following the use of this current justify me in claiming for it a decided superiority over any other form of electrical current for this purpose. I have used this current for medical purposes for the last five years, and in the after-treatment of cases in which the round ligaments have been shortened during the last year.

Massage, combined with faradic electricity ap-

plied in such a manner as to secure contraction of individual muscles and groups of muscles, is also a measure of great service, not only in securing the general improvement of the patient, but more directly, when localized in its application, as a means of strengthening the abdominal muscles and aiding the readjustment of the abdominal viscera to a normal condition. Massage is also a most potent means of relieving the obstinate constipation with which a large proportion of persons requiring this operation habitually suffer, and which will almost certainly occasion a recurrence of the displacement unless relieved.

Light calisthenics, exercises with Indian clubs and dumb-bells, pulley weights, etc., are of essential service. In fact, a regular systematic course of physical culture, or appropriate gymnasium training, is, in my opinion, necessary to fully insure a woman who has once suffered from uterine displacements from an ultimate recurrence of the condition. These patients often have an original defect in organization, a lack of physical development, or at any rate of a symmetrical development which predisposes them to uterine displacements. A young woman who has failed to develop strong abdominal muscles, who has not been allowed to run, jump and romp, and harden the muscles of the trunk and limbs when a girl, is a candidate for retroversion or flexion, or ovarian prolapse, or some allied malady as soon as she is obliged to endure any sort of physical hardship. This is, in my opinion, the reason why so many young women attribute all their ailments to going up and down stairs at school. I see no reason why a woman may not go up and down stairs as well as a man if her muscles are properly developed. Stanley asserts that the strongest porters in some portions of Africa are women. Inquiry in the hospitals of France, Germany, and Italy convinced me that uterine displacements are much less common among the women of the laboring classes of that country than in this country. If then, we have performed the operation of shortening the ligaments upon a woman whose physical development has been neglected, we must not be content with making her as well as before the displacement occurred; we must make her better than before, or the same morbid conditions will follow the same causes. If, then, instead of sending away a patient upon whom the operation of shortening the ligaments has been performed, with the same weak and unbalanced muscular condition as before, we subject her to a series of carefully graded exercises by which weak parts are strengthened and feeble parts developed, we prepare her to endure without injury those physical hardships, muscular strains, etc., which she must necessarily encounter, and thus insure her against the relapse which otherwise will almost inevitably occur.

Pursuing this plan in the management of cases upon which Alexander's operation has been per-

formed, I am sure that radical cures may be effected in numerous cases which by other means could only be palliated. As an essential aid to curative gynecology, I believe this operation is destined to prove a most valuable addition to this branch of medicine; and I feel confident that its proper employment in conjunction with other measures of treatment, and especially the appropriate after-treatment of cases, will in due time wear away the prejudice which has arisen against the operation through the neglect of the use of the supplementary measures necessary to secure to the patient operated upon the great benefits which might otherwise have been secured.

[Since the above paper was written I have performed the same operation in twenty-two additional cases, making sixty-nine in all. At the present date I find in the total number but four failures, ten much improved, and fifty-five complete successes. Of the last forty cases, there has been failure in but one case, and this was due to an accident in which the patient was led to exert herself so violently just after getting upon her feet subsequent to the operation, that the ligaments were torn loose. The total percentage of successes, including my first series of twenty-nine cases by the old method, is eighty. J. H. K.]

NASO-PHARYNGEAL FIBROMATA.

Read in the Section on Laryngology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1885.

BY E. FLETCHER INGALS, A.M., M.D.,

PROFESSOR OF LARYNGOLOGY, RUSH MEDICAL COLLEGE; PROFESSOR OF DISEASES OF THE THROAT AND CHEST, WOMAN'S MEDICAL COLLEGE, CHICAGO.

In 1884 I presented to this section a paper on naso-pharyngeal fibromata in which I reported four cases, two of which had been cured, and two of which had disappeared so that the result was unknown. In that paper I advocated the extirpation of these growths, when possible, through the natural passages by means of the galvano-cautery *écraseur* or other methods, employed by laryngologists in the destruction of nasal polypi, in preference to the formidable operation including removal of the superior maxilla, which has frequently been practiced by surgeons, and which is still believed, by some, to be the best means of eradicating these growths.

In a paper by Dr. Lincoln, of New York, to which I referred in my former article, it was shown that the operation usually adopted by surgeons was extremely hazardous—over 25 per cent. dying from the operation, while it was not very successful in preventing recurrence, as in only about 14 per cent. was it certain that the tumor had not returned within a year. By the method which I then recommended it was shown that the danger to life was very much less, and that the ultimate results were much better, as in

over 50 per cent. of the cases recurrence had not taken place within twelve months.

Recently one of the cases then reported, which had failed to return after the first sitting for completion of the operation, and which I had lost sight of at the time my former paper was written, has returned to me after the lapse of five years with a renewed growth in the same locality. This I have removed by means of the galvano-cautery *écraseur* at my clinic at Rush Medical College, in presence of Drs. Hinde and Breckinridge and the medical class. The operation was done after the parts had been anæsthetized by cocaine, and was completely successful in the removal of all of the tumor. It consisted of three lobules which had been attached by a base about half an inch in diameter at the vault of the pharynx and posterior naris of the left side. The tumor removed five years ago had the appearance of being composed entirely of fibrous tissue. Of the tumor recently removed the smaller lobule, which measured about five-eighths of an inch in diameter, proved upon microscopic examination, made in the Physiological Laboratory of Rush Medical College, to be made up of fibrous and cellular elements, being about four-fifths fibrous.¹ The next larger lobule which measured about three-eighths inch in diameter by one and a half inch in length, appeared to be fibro-cellular in character about one-half fibrous, and the largest which measured about one by two inches in diameter, seemed also fibro-cellular, about three-fourths fibrous. This case was at first reported as fibrous, and I believe that the tumor first removed fully justified placing it in that class, though the recent growths contain more of the cellular elements than is usual in the true fibromas. In this case there has been a recurrence of the growth as I had expected, because it was not entirely removed at first, the patient having failed to present herself for the second operation; but its slow growth, and the fact that these tumors are less likely to recur at this patient's age than in subjects at about the age of puberty, leads me to hope that the recent operation may prove the last one necessary.

I have also to present to the Section the history of a case from which I recently removed a large fibrous growth from the naso-pharynx with the galvano-cautery.

The patient, W. K., æt. 16, was brought to me by Dr. White, of Sandwich, Ill. I found that for two years he had been troubled with difficulty in breathing through the nose, and frequent epistaxis. For about two months before consulting me he had suffered from frequent alarming hemorrhages, during one of which Dr. White had been called in for the first time. The doctor checked the hemorrhage, but the patient was much exsanguinated and in no condition for an

¹ This was examined by Mr. Frank Lyman, 1st assistant in the physiological laboratory.

immediate operation, therefore, he was placed on tonics and nutritious food and given time to recuperate. As a result I found the patient well nourished and with no appearance of anæmia. His voice was of that peculiar character known as nasal, the sense of smell was nearly lost, and he complained of pain in the side and back of the head. The left cheek over the lower maxilla was quite prominent, and apparently swollen, but there was no induration excepting just opposite the posterior molar of the upper jaw, where a conical tumor could be felt deep in the soft tissues. This tumor appeared to be about five-eighths of an inch in diameter, at the farthest point where it could be felt, which was about the same distance back of its apex, and it was evidently attached far back in the tissues, out of reach. Upon examining the nares anteriorly, I found the posterior third of the left cavity filled with a firm growth of a light pink color, which bled very easily on being touched with a probe. Examining the mouth I found the soft palate crowded downward, and upon a rhinoscopic examination discovered the naso-pharyngeal cavity to be filled with a tumor of a light red color, and smooth surface, which was found to be hard to the touch. The slow progress of this case, the frequent attacks of epistaxis, and the appearance of the growth itself, convinced me that it was a fibroma. I recommended removal by the galvano-cautery *écraseur*, and left the patient to decide whether it should be done under the influence of cocaine or ether. I much preferred the former, knowing that with it, I would have a much better view of my work, yet I feared from experience with other cases that he might suffer considerable pain. Being anxious to return to his home as soon as possible, he decided to submit to the operation with only such relief from pain as could be afforded by cocaine. On the afternoon of the same day I operated, with the assistance of Drs. J. E. Rhodes and White and Mr. J. A. Bauman. A 10 per cent. solution of cocaine was first applied to the naso-pharynx and left naris by means of an atomizer and syringe about once in two minutes, for fifteen minutes, until the parts were benumbed. I then passed through the left naris two catheters which were brought out of the mouth and through them passed the two ends of a No. 8 platinum wire. As these were drawn out the nostril with the catheter the loop was carried up behind the tumor by the finger. The ends of the wire were then passed through a tubular electrode, made fast to a ratchet on the handle, and the battery was connected. I then tightened the loop by turning the ratchet, and heated the wire for two or three seconds by closing the circuit, then allowed the patient to rest a few seconds, and then repeated the procedure, thus alternately heating the wire as long as the patient could easily bear it, and then allowing it to cool

and tightening the ratchet. I soon burned off the growth, at its base, which was more than an inch in diameter.

The tumor was removed through the mouth and proved to be a fibrous growth measuring $1\frac{3}{4}$ by 2 inches in diameter, and 1 inch in thickness.

The operation had been easily borne, though it would have caused much pain if I had kept the wire constantly hot until the base of the tumor had been severed. Thus far there had been no bleeding. I then found that a portion of the growth still remained in the posterior part of the left naris. I could not engage it in a snare and therefore attempted to remove it with cutting forceps, but immediately profuse hemorrhage occurred, and I was obliged to plug the nose with a strip of gauze saturated with a thick mixture of tannic acid. This checked the bleeding promptly, but the patient had lost about a pint of blood in five minutes, and therefore further operations were deferred. The patient returned to his home the same day and no unfavorable symptoms recurred. Three weeks later he came to me again. The tumor within the nares had somewhat increased in size and was then found to be of such a shape that it could not be engaged in the snare, therefore I adopted a method which had been successfully employed in a few cases of this kind. I applied cocaine to the tumor in the nares, then introduced into it an electrolysis needle which I connected with the negative pole of a galvanic battery, applying the positive pole at the same time by means of a large flat sponge to the angle of the jaw and side of the neck. I turned on as many cells as the patient could tolerate and continued the electrolysis for fifteen minutes. Ten days later the patient returned and I found that the electrolysis had very materially reduced the size of the tumor, but at this visit I was able to remove a mass about half an inch in diameter with the galvano-cautery snare, therefore did not use electrolysis. Two weeks later I found that the small tumor in the cheek was reduced to one-fourth its former size. I again used the galvano-cautery snare, and removed a small portion of the tumor, and at the same time seared the surface of what remained in the naris. I was unable to remove enough of the growth to allow of free nasal respiration. About two weeks later the patient again returned. At this time I was unable to feel anything of the tumor in the cheek, and all the growth appeared to have been removed from the naso-pharynx, excepting a small mass at the opening of the left naris. The patient could breathe through the left naris considerably, but still a portion of the tumor obstructed its posterior part. I again practiced electrolysis. Ten days later the patient returned having progressed favorably. He was able to breathe through the left naris much better than formerly. Used electrolysis again.

During the past three years I have operated on two other cases of naso-pharyngeal tumors which appeared at first to be simple fibromas. The first case, A. P., æt. 13, was brought to me from Dakota, and during the course of a year and a half underwent three distinct operations, in each of which the tumor was removed as thoroughly as possible, but a portion of it which had become involved in the tissues about the pterygoid process of the sphenoid and a portion which passed into the cheek, could not be extirpated. The late Prof. Moses Gunn at one time removed the tumor from this patient's cheek; the tumor was about an inch in diameter. During the last six months of the treatment the naso-pharyngeal tumor grew so slowly that I hoped for its complete destruction, but the boy, who was in the city without friends, fell into bad company, and I felt compelled to send him home while a small portion of the growth remained. I have not since heard of the case.

The second of these cases, E. I., aged about thirteen, was brought to me from Nebraska about two and a half years ago, with a fibrous tumor which filled the left naris and naso-pharyngeal cavity. In this case the tumor was removed, partly by the galvano cautery and the steel wire écraseur and partly by cutting forceps. There was profuse bleeding whenever the cutting forceps were used, but it was readily checked by plugging the nasal and naso-pharyngeal cavities with a strip of gauze saturated with a mixture of tannic and gallic acids which had been rubbed up with just enough water to make it the consistency of syrup. The record of the case has been lost, but I recollect that three or four operations were done at intervals of from three to five months. Each time the growth being removed as completely as possible, though a small portion of it was doubtless left in the tissues about the pterygoid process. The last operation was done about a year ago, and I have not since heard directly from the patient whose residence I do not know. But from another patient who knew of the case, I heard recently that the boy is living and that so far as the friends can tell the growth had not returned. Though I am not certain of the result in either of these cases, I believe that it promised to be better than could have been expected from a more formidable operation.

These cases I have reported merely as an addition to the literature of this interesting subject, and with the hope of eliciting discussion which may be of much value. In the present state of our science, I believe that all of these cases which afford any reasonable hope of cure should be operated upon through the natural passages. When the tumor has been removed, if any parts remain which are inaccessible to the écraseur, cautery knife or cutting forceps, they should be treated by electrolysis, and thus even if we fail to

at once eradicate the growth we may hope to prolong the history of the case to the period of adolescence, at which time nature seems to set a limit, at least in many cases, to the further development of these growths, and then a cure may be effected.

70 State Street, Chicago.

FŒTICIDE AND ITS PREVENTION.

Read in the Section on Medical Jurisprudence, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY H. C. MARKHAM, M.D.,
OF INDEPENDENCE, IOWA.

In approaching the consideration of the subject of fœticide we are at the outset confronted by two facts, both of which possess an important significance. We first note that the highest crime—from some standpoints at least—of which criminal humanity is capable, and whose prevalence doubtless exceeds the highest estimate, is of no more judicial importance, in either treatise or statute, than when the evil was scarcely known, and motherhood was everywhere the crowning glory of woman. The second fact is little less an anomaly: that in the presence and despite the elevation, culture, refinement and, more than all else, the religious training and influences operating upon and in modern social life, that in the class of society making in all these respects the highest claims, this vice has developed, the enormity and extent of which is but feebly recognized outside the medical profession.

As aiding our purpose, which is that of endeavoring to discover remedies for the repression, if not suppression, of the crime of offspring murder, it may be useful to attempt an explanation of the causes whose operation has given this crime its peculiar status or, it may be said, have prevented its having any proper legal status in the calendar of capital crimes. So intimately blended and associated are the moral, judicial and medical phases of fœticide, that its relegation to the especial realm of either the law, the church, or medicine, has never been satisfactorily agreed upon. As neither profession has felt the obligation or responsibility concerning the evil which otherwise would exist, the evil, therefore, has naturally failed to receive in any proper degree an adequate consideration. To the moralist and jurist it presents a barrier of delicacy whose sacred realm they instinctively shrink from invading. The resistless power, also, of social pride and ambition would seem to leave little hope of reform through moral agencies. The highest level of ethical profession, in the geography of the modern social world, is honeycombed by this lurking and hideous evil. The conditions insuring perfect concealment and the absolute certainty of the ignorance of the public as to its commission impart characteristics both unique and formidable to the crime. Fœticide is

also the one great crime in which the chief victim, or sufferer, is wholly defenseless and without hope of an advocate. The type of unresisting innocence, it possesses no posthumous resources whose magic wand may set in relentless pursuit of the guilty the instruments of justice.

The champions of the temperance cause, in order to enforce and prove their claims, have only to point to the living victims of dissipation. Those espousing the cause of social purity easily refer to living illustrations of the evils they seek to remove. Statistics are the weapons most feared by the foes of public good. But fœticide enjoys immunity from all these methods of attack. As this important subject is, for inherent reasons, unsuited for judicial investigation, and successfully opposes religious influences, the obligation necessarily rests upon the medical profession to propose a method for checking the fearful progress of the evil. It scarcely subverts the purposes of this paper to attempt a delineation of the diabolical attributes and features of the crime from a moral standpoint, or to essay a medical statement and description of results, both pathological and physiological, of its committal. Neither is it essential, however *apropos* it may be to the discussion, to note its social relations; how the resistless lust for fashionable dissipation and distinction has rendered barrenness essential to their gratification. The limitations of time compel here an omission of these phases of the subject, however much they deserve that attention hitherto unreceived.

Judicially viewed, fœticide has characteristics and relations which render its treatment not only delicate but difficult. Of no other crime is it true that in nearly every instance of its commission there exists ample and unimpeachable evidence of the same, which evidence is also both vital and unavailable. Until a change occurs as to the application of professional rules and tenets in giving evidence in this class of cases, there is little ground for expecting success in the prosecution of the same. Refusing to be used as witnesses to aid the State in punishing those guilty is in contravention of the chief mission of medical science, which is no less than the removal of the causes of physical degeneracy and vice. The position of medical men as witnesses in cases of fœticide is for this reason exceptional, not compelling him, as in other cases, to defend the precepts of his profession and the rights of his patients by refusing to disclose the secrets and confidence of the latter.

Fœticide no more entitles the patient to this secrecy and confidence than does small-pox or other danger to the public, the stamping out of which is the duty of medicine to perform—*per contra*, it as greatly obligates the disclosure of the same. Is it not to be feared that the assurance of medical aid and confidence if danger follows operates as a strong incentive to attempt the performance of the crime upon themselves by those de-

siring it—a practice which the profession well knows is rapidly increasing. Probably no fact is indirectly more promotive of fœticide than the absence of laws regulating medical practice; thereby enabling abortionists, disguised as members of an honorable profession, to pursue their nefarious avocation with comparative impunity. Nothing less than adultery itself can exceed the wrong inflicted upon the husband who suffers wilful betrayal of his hopes and expectations of offspring. If congenital, and hence irresponsible physical procreative incompetency is adequate cause for legal dissolution of marital relations, how much more—measured by every possible standard—is the intentional procurement of the misfortune. Added to this loss is the keenness of disappointment which near realization tends to induce. Medical men will verify this as being no fancy or rare event, as too frequently, when called to rescue the victim from her self-induced peril, has it been a duty to impart to the anxious husband the cause of the danger and the first knowledge of his already severe loss.

Fœticide as a ground for divorce of either party to the marriage contract; whether it result from guilt of the wife, on the one hand, against the wishes of the husband, or whether the husband compels the unwilling submission of the wife to its procurement, upon the other, is, in either instance, both just and practical. Penalties aimed at "abortionists" as a class of criminals are little less than valueless. The party inciting the act—its actual principal—must be made to fear the consequences. The question is worthy the most serious consideration, whether the present facilities, and the alarming extent of their improvement, for disseminating criminal knowledge of the practice, does not remove the usual objections to a popular presentation of the evil as such. That once thought unsuitable for general publicity, is now sown widely by the vultures who fatten upon the harvests.

Our young men are properly taught the evil effects of alcoholic excess—why should not young women be warned of the nature and results of fœticide? There can be, from thoughtful students of the subject, only an affirmative reply. The task of the performance of this duty rests upon the medical profession, and every prompting of interest in the welfare of our race induces the hope that medicine may not betray the trust.

Independence, Ia., April 23, 1888.

THE ARNOT-OGDEN MEMORIAL HOSPITAL, of Elmira, N. Y., the gift of Mrs. Ogden to the city of Elmira, will be completed, at a cost of about \$100,000. The buildings are of brick, and it is said that the most approved methods of sanitary engineering have been employed.

PSEUDO-HYPERTROPHIC MUSCULAR PARALYSIS.

Read before the Indiana State Medical Society, June, 1888.

BY W. BYFORD RYAN, M.D.,
OF WILLOW BRANCH, IND.

I have the honor to present for your inspection three persons afflicted with this rare and imperfectly known disease.

The disease was first described by Sir Charles Bell in 1830; by two Italians, Coste and Gioja in 1838; by Meryon in 1851. The disease did not, however, receive much attention until Duchenne (of Boulogne) reported his collection of thirteen cases in 1868. The same year Dr. Meredith Clymer described the disease under the title "Progressive Myo-Sclerotic Paralysis," though he had not probably at that time seen a case. Dr. Clymer seems inclined to attribute the honor of discovery and first description of the disease to Dr. Edward Meryon, whose paper "On Granular and Fatty Degeneration of the Voluntary Muscles" was read December 9, 1851, and published in the *Medico-Chirurgical Transactions*, Vol. xxxv, 1852.

"Dr. Duchenne (de Boulogne), scouts the idea of Dr. Meryon having first described this affection (la priorité de la découverte). 'L'honneur de cette découverte appartient tout entière à la France' (that is, to himself). In the same paper he says: 'La découverte de la paralysie pseudo-hypertrophique remonte à l'année, 1858,' the year he observed his first case. Thus, by his own dates he admits Meryon's priority in description.

Up to 1867 there were less than fifty recorded cases in the Old World and none on this side of the Atlantic. Subsequently Ingall and Webber, Pepper, Weir Mitchell, Hamilton, and others have reported cases. More recently Gowers, in a clinical lecture in London, 1879, carefully reviewed the cases of English, Continental and American writers and compiled reports of one hundred and seventy-six cases. Of these all but eight were children. This seems to be the entire number on record to that date. I add four cases, three children and one adult.

It is not my purpose to enter into a verbose description of the disease, for excellent descriptions may be found in Clymer's Appendix to Aitken's *Science and Practice of Medicine*; in Ross's *Diseases of the Nervous System*; Pepper's and A. McL. Hamilton's works. Neither shall I attempt to solve the problem relative to the primary seat of the lesion, whether it be the muscles themselves, the anterior columns of the cord, or the anterior roots of the spinal nerves; but I shall confine myself to the history of the cases before us, presenting to you the characteristic appearance, attitude and pathognomonic actions of persons so afflicted, in a manner so definite that those

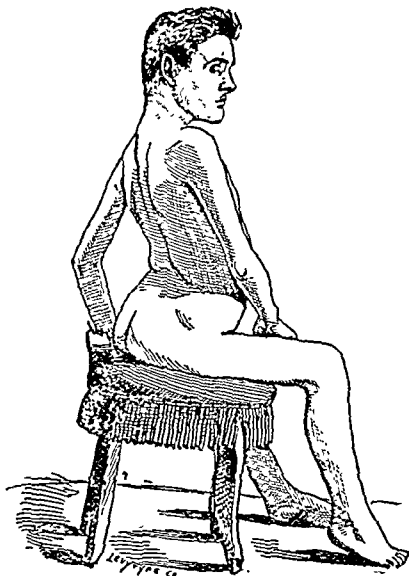
who see need have no difficulty in recognizing the disease if so unfortunate as to meet it in practice.

Dr. Duchenne details the symptoms of the disease in the following order:

1. In the beginning feebleness of the lower limbs.
2. Lateral balancing of the trunk and widening of the legs during walking.
3. A peculiar curvature of the spine or saddle-back in walking and standing (I may add in sitting).
4. Talipes equinus with an over-extension of the first phalanges of the toes.
5. Apparent hypertrophy of muscles.
6. Stationary condition.
7. Generalization and aggravation of the paralysis.

These are the striking features of the disease as I have observed it; and I may add the 8th, which is not, however, characteristic, atrophy of affected muscles.

The family to which these boys belong consisted of four boys and one girl. The eldest son, whom we have before us, is seventeen years old.



No. 1. Walter.

He began to walk at fifteen months, was always awkward, and kept a very unstable equilibrium. He received many falls which an active child would have escaped, and many reprimands from his parents for being "lubberly" and inattentive, before they realized that all this came of weakness and partial paralysis.

His general health has always been excellent. Has never had pain in affected muscles, febrile symptoms, convulsions, or any prodromata. He was a well-formed child, and the hypertrophy of his calves was marked by all observers, and, to his friends, added to the symmetry of his limbs. His appetite was unusually keen, even for a growing boy, and, though vast quantities of excellent food and almost an equal amount of condiments and other "trash" was consumed between meals,

his digestion never seemed to suffer. He was a gourmand, and still has an excellent appetite.

At nine years the sacro-lumbar curvature was very marked. This attitude is assumed because of weakness of the dorsal muscles and is essential to the maintenance of the erect posture.

The increasing cordosis led the family to call a prominent physician, a member of this Society, residing in an adjoining county, to consult with the gentleman who, up to this time, had been the family physician. I do not know what was the diagnosis. A plaster jacket was proposed, but for some reason never applied. Treatment of beef, wine and iron, and of hypophosphites of lime and soda was given and persisted in for six months. No improvement followed, but, on the contrary, the disease progressed.

The patient, discouraged and disgusted with treatment of any kind, came under my care. After careful study, I diagnosed pseudo-hypertrophic muscular paralysis, and gave an unfavorable prognosis. At this time I had seen no literature on the subject except Dr. Clymer's article in Aitken's Practice.

Strictest regimen and a large curtailment of the bill of fare was enjoined. An effort was made to tone the nervous system by the administration of bark, iron and strychnia; but Fowler's solution and regimen were the means in which I had most faith. Having no battery at hand, faradization was not tried. The patient made some improvement. He was able to ascend two or three steps; could stoop and again assume the erect posture by simply placing one hand upon the knee instead of climbing with the hands up the legs as you see Herbert, his younger brother, do. (See cut No. 2.)

The restrictions as to diet were disregarded, because the boy's insatiable appetite could not be curbed by indulgent parents and good-natured servants. The patient petulantly protested against taking remedial agents, and the parents yielding to him, treatment was discontinued after less than two months' trial. At this time the boy, now near ten years old weighed 120 pounds. Within three months of the time he came under my care he was sent, against my protest, to the Surgical Institute in this city, where he was put upon the rack and his enfeebled muscles exhausted by enforced exercise. A brace was strapped upon him for the correction of the spinal curvature which is, as before stated, voluntarily or intuitively assumed as a compensatory relief of the enfeebled dorsal and lumbar muscles. After spending near six months in the institute, he returned to his home almost deprived of the power of locomotion, and within a few weeks he took to his chair, from which he has not arisen unaided since. He has been unable to walk or even to stand since he was eleven years old. At thirteen years he weighed 140 pounds, but since that time he has lost by

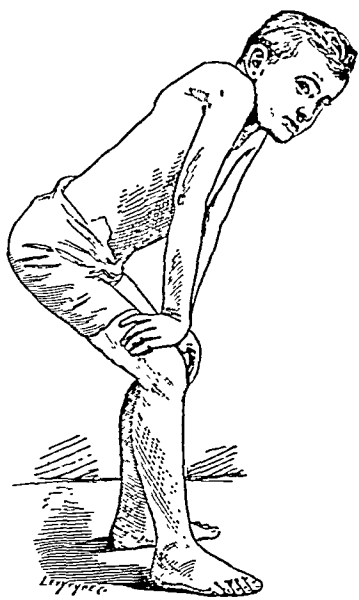
atrophy what he had gained by hypertrophy. The gastrocnemii are in permanent contraction. The disease has progressed very slowly since he took to his chair. He has not been treated for this affection since his return from the institute in this city. The muscles of the arms, back and shoulders are atrophied and powerless; but he derives much comfort and some profit from the use of the muscles of the forearm and hand, which are still subject to his will and retain a degree of force. The grasp is feeble yet he writes a beautiful, uniform hand. The abdominal, intercostal and sphincter muscles, and those of the face, throat and diaphragm seem to be intact. His mind is clear, memory good. He stands fair in his classes at school and, though not unusually quick, he is, in mathematics, rather better than most of his associates in this department. He expresses an earnest desire to have the progress of the disease arrested at this stage, and says that if he could remain as he is life would be enjoyable rather than burdensome to him.

The second son of this family never had any perceptible symptoms of this disease. He began to walk at twenty-one months; was intellectually clear though not brilliant; was peculiarly reticent and old in his ways though active in movement. He had a severe attack of rheumatism, which came upon him suddenly, making him helpless, one day at school. Whether this attack meant anything more than rheumatism I cannot say; yet, in the light of subsequent developments in this family, the presumption is strong that the disease under discussion entered as an important element. Urinary tests, however, and the usual treatment demonstrated the correctness of the diagnosis of rheumatism. There were cardiac complications. His chest was his vulnerable point in the opinion of his parents and former physician, and I acquiesced in that opinion long before this illness. When the more violent symptoms of rheumatism subsided a pulmonary trouble, which I then regarded as tuberculosis, terminated his life at the age of nine years. I have since thought that the lung affection would not so soon have carried him off had not paralysis of the diaphragm entered as a factor; but this is an after-thought and somewhat in the nature of speculation.

The third child, a blooming girl of ten years, is sprightly, healthy and mentally bright. I have no fears of her being affected, with this disease for the reasons that there are no indications of it, and the disease is almost, if not entirely confined to the male sex. Yet it is more than probable that she will transmit the disease, as the transmission has, hitherto, always been through the maternal ancestors.

The fourth child, a son, Herbert T., is before you. (See fig. 2.) He walked at thirteen months.

It is needless to say that he is progressing more rapidly in his decline with this terrible malady than did his elder brother. He is eight years old. You observe the attitude he is compelled to assume in order to maintain his equilibrium, and his shambling gait, peculiar in the pitching the feet forward with the toes lower than the heels, the latter being the beginning of an equinism produced by permanent shortening of the gastrocnemii and paralysis of the extensors. Your attention is invited to the size of his calves and to their firmness to the touch; myo-sclerotic paralysis is not a misnomer. Observe that the muscles of the thighs, arms and back are beginning to atrophy. This boy, aside from this disease, has always had excellent health, a sharp appetite and a good digestion.



No. 2. Herbert.

I desire to call your attention to his method of arising from the sitting or stooping posture. (See cut 2.) He will not permit one to lift him into the standing position, for the reason that he would fall forward if deprived of support before he was able to curve his spine into the peculiar saddle-back pose, with abdomen thrown forward and shoulders back. In order to attain the position given in cut No. 2, arising from the ground, he first gets upon hands and knees, then grasps his ankles, then climbs his legs with his hands. Having attained the position given in the cut the next act is to extend the knees, which is effected by bending forward and downward, so as to cast the center of gravity in front of the knees, the weight acting as the power at the hip joint, extending the knees without the use of the quadriceps extensor. To extend the hip joints the patient works his way up the thighs, placing his

hands higher and higher until the erect posture is attained, the shoulders are cast back till the arms swing so far back that the hands drop back of the pelvis. This behavior in arising from the ground is striking and pathognomonic. Sir Charles Bell recognized it and declared that it is met in no other disease. Gowers and Hamilton are of the same opinion.

The youngest child, who is before you, a boy named Raymond T., is 3 years old. Has been healthy in the main. Had an attack of pneumonia last winter attended with great cerebral disturbance but no convulsions. He is clumsy, maintains the attitude of his brother Herbert in a less pronounced degree, and evidently will follow the pathway of his brothers, unless haply something can be done to avert this calamity.

The heads of these three boys are unusually large.

The eldest, Walter, æt. 17 years, circumference of head $23\frac{1}{2}$ inches.

The third son, Herbert, æt. 8, circumference of head $21\frac{1}{8}$ inches.

The youngest, Raymond, æt. 3 years, circumference of head $21\frac{1}{2}$ inches.

So far as I have been able to learn there is no history of pseudo-hypertrophic muscular paralysis in the family of the mother of our patients. Her mother, who is still living and active, is now 70 years of age.

The paternal grandfather, æt. 76, is, undoubtedly, a subject of the disease, though he vindictively repudiates such an intimation, and, while he acknowledges that his back is weak and his arms and shoulders are not what they ought to be, he attributes his weakness and awkwardness to age, the effect of erysipelas and a fall received many years ago. From the best information I can get, the disease began to show itself in him after a traumatic lesion, and has progressed very slowly, though I cannot bring myself to believe that the disease originated in the traumatism, received after the age of 50. I regard the traumatism as the means of arousing the latent disease. About a month ago the old gentleman, after a ride of 22 miles, sat down to a very late dinner, and on attempting to arise from his chair, fell heavily to the floor, and was unable to arise for nearly one-half hour, declining help. This fall was followed by some fever and considerable mental agitation, a kind of talkative delirium for two or three days, after which he was, and is, as well in every respect as usual. The muscles of his back, thighs and arms are considerably atrophied, yet he is by no means so disabled as either of the grandsons shown you to-day.

There are two things unique in this case:

1. Development of the disease at an advanced age of perhaps 50 years.

2. Hereditary transmission through a son. Hitherto it has been only on the mother's side

that the hereditary influence has been transmitted, while the disease develops almost invariably in males. Several brothers of the old gentleman died of phthisis pulmonalis; one died of some renal disease, probably diabetes mellitus, one sister had a slight paralytic seizure, but is fully recovered. All his brothers and sisters have lived to advanced age save one.

The boys shown you to-day have two uncles and an aunt on the father's side who are married and have children; but as yet none of these cousins, six in number, four males and two females, have shown symptoms of this disease, though two are fathers and two others have reached puberty. In conclusion, I ought to say, that there is not a male member of the grandfather's family or of his nephew's, with whom I am acquainted, whom I would regard as an active man, though they are energetic and of average strength.

HYSTERIA OF A GRAVE FORM IN THREE SUCCESSIVE PREGNANCIES. CASE.

Read before the Medical Society of the District of Columbia, June 6, 1888.

BY ERNEST F. KING, A.M., M.D.,
OF WASHINGTON, D. C.

On Sunday, December 20, 1885, I was sent for to see Mrs. X., æt. 19, then in the fourth month of her first pregnancy. I found her having sharp uterine pains every ten to fifteen minutes. She had been, as she declared, "unusually well" during the previous months, and could assign no cause for the threatened mischief. Upon the administration of opiates the pains ceased and there was no further trouble for about three weeks. At this time a train of symptoms began which continued throughout the pregnancy. Mrs. X. went to bed, refused food, seemingly did not recognize any of the family, threw herself from side to side, moaning constantly—in short, went through every manœuvre that an hysterical brain could contrive. This would continue for four or five days, and would be followed by an interval of about the same duration when the patient would appear like herself. Every expedient suggested for such cases was made trial of, but without permanent benefit. Tonics were administered throughout.

On Friday, June 4, labor began. The day before violent motions of the child were felt, which suddenly stopped. The os dilated slowly, the pains were infrequent and short. Sunday morning, the patient beginning to become exhausted, I applied the forceps and delivered a well-formed dead child. The mother almost immediately became as a different person. Within a week her form rounded out, color returned to her cheeks, and she declared that she "never felt better."

I saw Mrs. X. at intervals during the months following, and some time in November learned

that she was again pregnant. She experienced no discomfort and appeared as usual. On February 15, 1887, she went down town on a shopping expedition, and while lunching at a restaurant felt a sharp pain. She walked to her home, some nine blocks, and went to bed. I saw her within an hour after her return and found her having pains regularly. A foot protruded from the uterus, and in a short time the labor was completed. There were no unfavorable symptoms, and the following day a desire was expressed to go back and finish the lunch.

Both Mrs. X. and her husband were greatly disappointed at the result of these pregnancies, having experienced much pleasure in the anticipation of offspring. In April I learned that the third pregnancy dated from the first of March. On July 7 Mrs. X. came to my office complaining of slight pains at long intervals. I advised rest in bed and, when afterwards the pains increased in frequency, I ordered full doses of opium, which effectually controlled the difficulty. At this time began again the train of symptoms observed during the first pregnancy. There would be periods, lasting for days, of hysterical manifestations with intervals of quiet. There was a constant change of symptoms. No two attacks were exactly alike, though there were points of resemblance, such as taking no notice of what went on in the room, refusing to answer questions, complaining of her head, and refusing to touch food. However, food left in the room frequently disappeared.

Once there was complaint of numbness in one arm and inability to use the same. She was seen through a partially opened door to be fanning herself, using the paralyzed arm, but at the noise made in opening the door the arm dropped as though powerless. In October came a new trouble. Every few minutes the diaphragm would violently contract three or four times. Mrs. X. declared that the motions were those of the child. Aside from these movements she appeared natural. At this time Dr. Jos. Taber Johnson saw her with me.

In November there were two periods when she became violent and I feared she would harm herself or the child. She passed safely through these, however, and on December 5, 1887, she was safely delivered of a well developed male child. With the same elasticity before displayed she was immediately herself, grew strong rapidly, and is to-day in the best of spirits.

Briefly stated, Mrs. X. has been pregnant three times. Each time there has been no trouble up to the fourth month. At this period she miscarried once, and there was evidently danger of the same the other times. After the fourth month was completed the first and third pregnancies presented the same train of hysterical symptoms accompanied by weakness, pallor, loss of flesh and constipation. The urine, though carefully exam-

ined at intervals, gave no trace of albumin. Nothing afforded more than temporary relief. A blister to the back of her neck gave good results; the discomfort seemed to cause her to forget her ordinary troubles. A strong interrupted current would likewise hold her attention.

Since December I have seen Mrs. X. frequently, and have noticed nothing unusual save a slight 'witching of the shoulder. A former servant of her mother tells me that Mrs. X. had "spells" at each monthly period while she was still in school. During these spells she would moan and throw herself about, not noticing others in the room.

During the past six months I have attended a brother and three sisters of Mrs. X., all of whom presented nervous symptoms entirely incommensurate with the cause of the trouble.

The case is of particular interest to me at present, for, since writing the above, I have learned that Mrs. X. is again pregnant, or at least she believes that she is, dating from April 1. Granting that she is, is it not probable that there will be some disturbance at the fourth month? If *this* trouble is overcome, will there not follow the same train of nervous symptoms that I have described?

HOSPITAL REPORTS.

Woman's Clinic, Cincinnati College of Medicine and Surgery.

SERVICE OF PROFESSOR CHARLES A. L. REED.

VESICO-VAGINAL FISTULA CONSEQUENT UPON VAGINAL HYSTERECTOMY. MODIFICATION OF TAIT'S OPERATION. RECOVERY.

Mrs. M., æt. 34, submitted to vaginal hysterectomy for carcinoma of the uterus in February last. The uterus at the time was found to be much enlarged, and was intimately adherent to the bladder for over three and a half inches. In the act of enucleation the bladder was accidentally entered and a fistula as large as a silver dime resulted. It was not, strictly speaking, a vesico-vaginal, but rather a vesico-abdominal, fistula, as the opening was near the fundus of the bladder, and communicated with the peritoneal cavity. The urine escaped from the pelvis through the small cicatricial orifice at the apex of the vagina representing the former uterine site.

Operation, October 15. Present and assisting, Drs. Boyle, Hall, Cassett, and W. F. Taylor. The patient was put upon her back, anæsthetized, and her legs flexed as for perineal operation. Jones' self-retaining speculum was inserted, affording an excellent view of the anterior wall and vault of the vagina. The cicatricial ring was dilated, and the fistulous portion of the bladder brought into view. The peritoneal and mucous layers of the wall of the bladder were now separated around

the whole circumference of the fistula. It was found difficult to make the dissection at the angles of the opening, so the external fistulous orifice was enlarged by making a slit in the superficial layer by means of the scissors which were used for the dissection. The upper and lower flaps were now seized with fixation forceps and drawn away from the cystic layer. The dissection was carried to the depth of half an inch. A continuous catgut suture was now passed through the cystic layer in such a way that when drawn up the denuded surfaces above and below the external fistulous orifice would be approximated. Interrupted wire sutures were now employed to close the external flaps, ten being employed for the purpose. In this way the "slit-flap," and all the breadth of the raw surface of which it is capable, were secured; and union was complete in ten days.

The operation differs from Mr. Tait's: (1) in the lateral slits in the external layer; (2) in the greater depth of the dissection; (3) in the employment of the continuous catgut for the cystic layer; (4) in the use of the interrupted wire suture instead of the "tobacco-pouch-draw-string suture," for finally closing the opening.

MEDICAL PROGRESS.

BRONCHO-PNEUMONIA IN CHILDREN.—TORDENS says that the age of the patient is an important matter in prognosis. The younger the child, the less easily does it bear an attack of broncho-pneumonia, and children of less than three months almost always succumb. The malady is much more fatal when consecutive to an infectious disease. The various medicaments recommended are the antiphlogistics, revulsants, expectorants, emetics, excitants, and hydropathy. Hænoch prescribes local blood-letting in vigorous subjects. In case of excessive dyspnoea in strong children, an amelioration may be brought about by subtracting a certain amount of blood. Cadet de Gassicourt denies to blood-letting the power of alleviating dyspnoea, and Tordens holds the same opinion. Dry cupping on the chest may aid in alleviating the pulmonary congestion without impairing the physical powers of the patients. Where there is a tendency to hepatization, indicated by soufflé at the same point for several days, a blister applied after the fever has diminished gives excellent results. Large vesications should not be used. Emetics are indicated when there is abundant mucus secretion from the bronchi; but care should be taken in employing them, on account of their tendency to cause prostration. Ipecac is one of the best emetics to use in broncho-pneumonia of children. In large doses it causes vomiting and lowers temperature. It is also an excellent expectorant. But in cases of capillary bronchitis

or broncho-pneumonia Tordens prefers apomorphine given in doses of 1 or 2 centig. a day. It sometimes causes vomiting, but this is not followed by dangerous prostration. Hydropathy has remarkable efficacy in broncho-pneumonia of children. It causes deep inspirations, produces a cutaneous derivation, and acts favorably by the vapor of water with which it fills the atmosphere. Tordens envelops the patient from the neck to the umbilicus in cold or tepid water compresses. Vapor of water should be constantly disengaged in the room.—*Revue Générale de Clinique et de Thérapeutique*, No. 43, 1888.

CANCER BY SKIN GRAFTS.—The *Centralbl. f. Chirurgie*, 1888, p. 726, mentions the following case, in which carcinomatous nodules were transplanted from one breast to the other by means of skin, and which possesses considerable interest both pathologically and therapeutically. Having determined that a case in which the breast had been previously removed for cancer was too far advanced to permit of a second operation, HAHN obtained the patient's leave to ascertain if it was possible to inoculate the skin over the second breast by pieces derived from the affected skin over the first. Numerous small cancerous nodules were, on April 9, cut off as evenly as possible with grafting scissors, and transplanted by Reverdin's method on the sound breast, after skin on the selected spot had been removed so as to leave an ulcer for their reception. On May 1, the transplanted pieces had taken firm root, and the ulcer was completely covered with epidermis. On May 19, at the edge of the pieces of skin some small projecting nodules appeared about the size of a millet seed; they gradually increased in dimensions, and by June 26 had reached the size of a cherry-stone. Four days later the patient died. On microscopic examination of sections of the transplanted skin, all of which gave a characteristic appearance, it was evident that the main mass of the tumors consisted of a well-developed connective tissue stroma, containing irregular masses of epithelial cells inclosed in it. These masses had clearly insinuated themselves into the healthy tissues, which were on all sides beginning to be invaded by the epithelial nests. The above related facts seem to prove clearly that carcinoma can, under suitable conditions, be inoculated upon healthy tissues; and the practical deduction to be drawn from this circumstance is, that great care should be exercised during an operation to avoid taking up pieces of cancerous tissue in the forceps, and leaving them adherent to the edges of the wound, where they may afterward find a permanent resting place.—*Practitioner*, November, 1888.

EFFECT OF HYOSCINE.—DR. S. FISCHER, of Buda-Pesth, writing in the *Gyógyászat* on the in-

fluence of hyoscine, arrives at the following conclusions: 1. The "hyoscinum muriaticum" may be successfully used as a sedative in greatly-excited or maniacal patients. 2. As the effect of hyoscine manifests itself even after a dose of half a milligramme, larger doses should be avoided, though the dose may be increased to one milligramme without any harm. 3. No bad after-effect is observed in such doses. 4. The drug also proves efficient as a hypnotic; but, owing to its depressing influence on the organism, it should only be used in those cases in which other drugs are ineffectual. 5. In five cases—namely, of chronic mania, chronic dementia, and acute insanity—the drug did no good. This was perhaps due to idiosyncrasy on the part of the patients.—*British Medical Journal*, Oct. 20, 1888.

TREATMENT OF CORNS ON THE SOLES OF THE FEET.—This affection is best treated, according to UNNA, by painting a circle of zinc-clay paste about the corn, and, when this has dried on, placing inside the ring a piece of salicyl-creasote plaster muslin (salicyl 40, creasote 40); then the whole is covered over with the paste and allowed to dry. With sweating feet or where the feet are very hot, the part is to be enveloped before the dressing is dry with a soft muslin bandage; this is to be stuck fast with the paste. The dressing should be changed once or twice a week, each time removing the loosened horny layer.

TREATMENT OF INFANTILE ECZEMA.—In the obstinate cases of eczema that occur in children during the second half of the first year, and affect particularly the face and extensor aspects of the extremities, Boeck recommends compresses of a weak solution of nitrate of silver (1 to 500), alternating with an ointment. The compresses are applied covered with gutta-percha paper for two or three hours night and morning, and a soothing ointment during the rest of the day and at night. The unguentum vaselini plumbicum suits very well.—*Vierteljahresschrift für Dermatologie und Syphilis*, June, 1888.

CANNABIN IN BASEDOW'S DISEASE.—VALEIRI, after using cannabin in three cases of exophthalmic goitre, recommends the following formulæ:

R. Cannabin. gr. iv ss
Sugar of milk, q. s.
Make 5 pills.

S.—To be taken in 24 hours.

. Cannabin. gr. iv ss
Distilled water. 2 iij
Syrup of orange flowers. 5 j ʒ

S.—Take in teaspoonful doses in 24 hours.

Or, we may prescribe a decoction of 2 or 4:100 parts, or doses of ℥ 15 or 30 of the tincture.—*Wiener Med. Presse*, No. 41, 1888.

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SATURDAY, DECEMBER 8, 1888.

SUDDEN HEART-FAILURE IN DIPHTHERIA.

At the first meeting of the New York Academy of Medicine in November Dr. J. LEWIS SMITH read a most suggestive paper on this subject, admirably supplemental to that read by Dr. Wm. H. Thompson last Spring, on diphtheritic paralysis. In no other disease is sudden heart-failure so frequently met with as in diphtheria, and in no other disease is the physician so likely to be deceived as to diagnosis, since the sudden failure of the heart often occurs in convalescence.

As to the cause of this condition, Dr. Smith thinks that Bouchut and Lagrane's hypothesis, that it is due to endocarditis, is untenable, but that the view that the sudden failure is due to granulo-fatty degeneration of the heart is more plausible. Oertel is in favor of this view, and it must be said that such degenerative changes, occurring in a considerable proportion of the muscular fibres, would render the cardiac contractions feeble, and perhaps inadequate. But in the majority of cases the loss of cardiac power is sudden, and occurs during convalescence, when degenerative changes are not likely to occur. In most cases the cardiac contractile power does not appear to be notably weakened before the attack of heart-failure, as it would probably be if the myocardial degenerative changes were the sole or chief cause. Furthermore, in typical cases of sudden heart-failure the microscope sometimes shows the myocardium to be perfectly healthy. Heart-clot cannot be the primary cause, but is a secondary condition, as shown

by Cadet de Gassicourt and Sanné. Dr. Smith regards the theory of deficient innervation, or a true cardiac paralysis, as the most tenable hypothesis, applicable to the largest number of cases, and the most satisfactory explanation of the cases in which death occurs during convalescence, as well as of those in which the necropsy shows a healthy state of the heart. The theory of arrested or deficient innervation partly explains the concomitant symptoms, such as vomiting, epigastric pain, and dyspnoea or irregular respiration.

Etiologically this cardiac paralysis is associated with and often preceded by other forms of paralysis. What is true of the causes and nature of palatal and multiple paralyses, even of abolition of tendon-reflexes, is most probably true also of cardiac paralysis. We are all familiar with the theories of Gubler and Trousseau, and with the microscopic examinations of Charcot, Buhl, Oertel, and others, which have shown that the peripheral nerves distributed to paralyzed muscles sometimes undergo degenerative changes; and marked anatomical changes have been found in the gray matter of the cord and the roots of the spinal nerves. But the theory as to the etiology of diphtheria that is gaining acceptance, is that systemic infection occurs through ptomaines, produced upon the surface by the microbes, and then enters the system through the lymphatics and blood-vessels. If this hypothesis be true we must attribute anatomical changes in the interior of the body, in the peripheral nerves and cerebro-spinal axis, to the agency of ptomaines, and ptomaines must be the causal agent, acting directly or indirectly, in diphtheritic paralysis. In his recent paper Dr. Wm. H. Thomson writes: "It is quite conceivable that a ptomaine may follow upon the changes which the diphtheritic process sets up in the organism, and thus produce all its characteristic symptoms. The special tendency of diphtheritic inflammation to cause necrotic and gangrenous lesions lends further support to this surmise." The ptomaines spring into existence suddenly and unexpectedly under favorable conditions. Clinical facts appear to harmonize best with the theory that a ptomaine is the direct cause of the paralysis, especially in cases occurring early and quickly cured; although it seems idle to argue that the marked degenerative peripheral and central nerve lesions so frequently present in those who have died with diphtheritic paralysis,

do not prolong and intensify the paralysis, and are in some instances its primary cause.

As to the treatment of cardiac paralysis, Dr. Smith said that it was evident, from the nature of the trouble, that it must be combatted promptly and with the most active remedies. The patient should be kept quiet in bed, with the head low, and alcoholic stimulus administered at once. In sudden seizures hypodermic injections of brandy act most promptly in sustaining the heart's action. Ammonia, camphor, musk and electricity are also of service, as well as the predigested beef preparations, peptonized milk, and other concentrated foods designed for those with feeble digestion. If the urgent symptoms are relieved by these measures, such remedies should be employed as are useful in other forms of diphtheritic paralysis.

DEEPER BRAIN SURGERY.

Will tapping and draining the ventricles of the brain become a definite and legitimate surgical procedure? This question we can answer only by considering a recent paper¹ by that rarely accomplished anatomist and careful surgeon, DR. W. W. KEEN, in which he records a case under the following title: "Exploratory trephining and puncture of the brain almost to the lateral ventricle. For intracranial Pressure supposed to be due to an Abscess in the Temporo-sphenoidal Lobe. Temporary Improvement; Death on the Fifth Day; Autopsy; Meningitis with Effusion into the Ventricles. With a description of a proposed Operation to tap and drain the Ventricles as a definite Surgical Procedure."

The patient was a scrofulous child, æt. 14 years, with a purulent discharge from the ear for six months or more, sudden vomiting evidently cerebral, headache, a tender spot above and in front of the left ear and at no other point, possible aphasia, paralysis of the left sixth nerve, congestion of the optic papilla more marked on the left side, pulse normal, temperature, while not normal or sub-normal, but little elevated until a little while before death. Meningitis and cerebellar abscess were excluded for obvious reasons, as were involvement of the motor region, abscesses in the frontal and occipital lobes, mastoid disease, abscess between the dura and the skull, and plugging of the lateral sinus.

The symptoms pointed to mischief on the left side, and mostly to abscess of the temporo-sphenoidal lobe.

As shown by the title of the paper, the patient died on the fifth day. The autopsy showed that, saving a slight disintegration of the brain tissue in a very thin layer around the track of the drainage tube, the cerebral substance was healthy; and, remarkable enough, no trace could be found of any evidence of puncture in the brain tissue. The internal extremity of the drainage canal, which was one inch long, was within a quarter of an inch of the distended left ventricle. Dr. Keen says, in regard to the use of the needle and grooved director in exploring the brain:

When the dura is intact the syringe must be used, but it should be used with great caution on account of the suction, for, though I had a suction cavity of only seven to ten minims in the barrel of my syringe, yet the brain substance was sucked up into it every time. I cannot but think that the introduction of a grooved director would be safer and certainly, as shown by the post-mortem, did no more injury to the brain substance than the syringe itself, with its certain loss of tissue. The grooved director would allow pus or any other fluid to escape by its deep groove. The sharp point of the needle might readily puncture a vein, a large artery, a sinus, or possibly one of the large nerves, but the blunt end of the director exposes us to no such danger, and invites to a more extended and thorough exploration.

The experience of Beck, Watson and Weir shows that Dr. Keen's objections to the use of the needle are not merely theoretical.

As the result of his observations in this case Dr. Keen proposes tapping of the ventricles as a systematic operation in any similar case of dropsy of the ventricles or of abscess in them. He draws an analogy between the serous membrane of the abdomen and that of the brain, and pleads for a similar treatment in cases of similar disease. As we open the belly and drain in tubercular peritonitis with good success, he proposes the same thing for the brain; and he claims that, on account of the confined position of the brain, the operation is even more urgently necessary, than in the case of pressure in the abdomen. To the possible objection that much drainage of cerebro-spinal

¹ Medical News, Dec. 1, 1888.

fluid would be dangerous, Dr. Keen replies: 1. We do not know that till we try. 2. In his brain-tumor case, in Horsley's spinal-tumor case, and in a case of Championnière's long-continued and abundant drainings were not sources of danger. 3. Experience may show us that possibly in the head, as in the abdomen, simple evacuation of fluid without its continuous drainage, may be not only feasible, but best. Dissections and trials on the cadaver have shown that the motor zone must be avoided, the neighborhood of the fissure of Sylvius must be avoided, and known sense-centres must be avoided; the so-called "latent zones" must be utilized.

Dr. Keen's proposal is certainly a bold one; did it come from a less careful surgeon it might be called rash. But the surgeon of to-day can scarcely think of any reasonable and practicable operation on the brain as some surgeons of Dr. Meigs' day thought of ovariectomy. Dr. Keen proposes three routes as practicable for the operation in question. The limitation of space, however, preclude discussion of them.

EDITORIAL NOTES.

DR. THOMAS G. MORTON, of Philadelphia, has been made an honorary member of the Society of Mental Medicine, of Ghent, Belgium.

GARBAGE CREMATION.—The board of health of San Diego, Cal., does not favor cremation as a method of garbage disposal. Has the board made a proper examination of the matter?

SIR WILLIAM JENNER has resigned from the British Medical Association, it is said, on account of the publication in the *British Medical Journal* of the late Emperor Frederick's note to Dr. Mackenzie.

SCARLET FEVER IN MILWAUKEE.—On Nov. 17 there were 24 cases of scarlet fever in Milwaukee, and within the next week 14 new cases developed. Up to Nov. 24 there had been 12 recoveries and 2 deaths.

COMPULSORY VACCINATION.—Small-pox is causing some alarm on the Pacific Coast and a short time ago fourteen doctors and a number of medical students made a descent on the schools of Portland, Ore., and vaccinated the unsuspecting pupils *vi et armis*. Five hundred and thirty were thus vaccinated in a single day.

FOREIGN BODY IN THE TRACHEA.—Some three months ago a 5-year old boy in Milwaukee put a brass staple into his mouth, and the staple was carried into the trachea in some manner. The boy had periodical attacks of coughing until a few days ago, when during one of the attacks his father held him up by the feet, and the staple passed into the mouth, whence it was removed.

ACTINOMYCOSIS.—At a recent meeting of the St. Louis Medical Society Dr. L. Bremer exhibited the jaw of an ox affected with actinomycosis. Dr. Bremer believes that actinomycosis frequently exists in man, always in the chronic form, and that it is frequently confounded with tuberculosis, bronchial affection, and sometimes with other diseases.

SANITARIUM FOR PHTHISIS.—It is said that a sanitarium for consumptives on a novel plan is to be established at Reineckendorf, a village near Berlin. A large, cylindrical building will be occupied in the upper part by the patients, while the ground floor will be given up to the accommodation of large numbers of milch cows, the exhalations from which will be conducted to the apartments above.

INFANT MORTALITY IN A FOUNDLING ASYLUM.—The Board of Health of Ontario reported on Nov. 13 that 70 per cent. of the infants placed in the Foundlings' Home in Ottawa had died during the year. The establishment known as the "House of Bethlehem" receives a subsidy from the Province. The only charge so far against the proprietor of the institution is that infants do not receive proper nursery and feeding. As yet there is no evidence to show that there has been any criminal negligence, but an investigation will probably be made.

THE COST OF PLEURO-PNEUMONIA AMONG CATTLE.—In an address to the Consolidated Cattle Growers' Convention, which recently met in Chicago, Mr. Salmon said that more than 7,000 head of cattle were destroyed in different States last year in consequence of pleuro-pneumonia. The effect of this announcement was to impress the convention with the danger to be apprehended from the spread of this destructive scourge, and plans have been formulated for presenting the matter to Congress, which will be asked to take prompt and effective measures for

the extirpation of the malady and the protection of the cattle interest. It is a matter that concerns not only an important industry, but that involves sanitary considerations of great moment, and should receive prompt attention. Meanwhile, some one should give the cattle growers and other people some idea of the extent to which preventable *human* diseases affects the pockets of the people. The brain of the average man is most easily reached through his pocket-book.

A NEW DISINFECTANT.—It is stated that a new and powerful disinfectant has lately been discovered by a Parisian chemist, and if what he claims for it be true, it will be adopted for very many purposes for which disinfectants are generally used. The basis of the preparation has been obtained from coal-oil, and is a brown liquid of a not disagreeable odor. It is said to be the result of a peculiar saponification of the oil by a chemical process with a mixture of caustic soda. The value of the disinfectant was accidentally discovered by the discoverer, who, desiring to save a pet tree around which a lot of fungous moss had grown, sprinkled some of the mixture around the roots. By repeated use the excrescence was shortly afterward noticed to separate from the tree and fall to the ground. Horses were also sponged with a weak solution of the mixture and it was noticed that flies that generally pester the animals gave them a wide berth.

SOCIETY PROCEEDINGS.

American Academy of Medicine.

Twelfth Annual Meeting, held in the Governor's Rooms of the New York Hospital, November 13, 1888.

TUESDAY, NOVEMBER 13—FIRST DAY.

THE PRESIDENT, DR. FREDERICK HENRY GERISH, of Portland, Me., called the Academy to order at 10:30 A.M. The minutes of the last annual meeting were read and approved. The deaths of the following members were reported: C. R. Agnew, New York; M. H. Borland, Pittsburgh; Howard Pinkney, New York; Theodore T. Wing, Susquehanna, Pa.; E. S. Dunster, Ann Arbor, Mich.; Stephen B. Kieffer, Carlisle, Pa.

The first scientific business was the report of the standing committee on the

REQUIREMENTS FOR PRELIMINARY EDUCATION IN THE MEDICAL COLLEGES OF THE UNITED STATES AND CANADA,

by DR. LEARTUS CONNOR, of Detroit, Mich. In speaking of the preliminary requirements, stress was laid upon the importance of a sound body. In no learned profession is the mortality so great as in the medical. Reference was made to the methods of determining whether or not the colleges fulfil the statements made in their announcements. One of these was by means of decoy letters. This plan last year indicated that the majority of colleges fulfilled these statements. Another method of judging is by examinations of the graduates by disinterested parties, as the army, navy, etc. Positive data are not at present available, but in regard to these examinations the principal deficiency seems to be in the preliminary education. The general verdict of editors is that the average doctor is lamentably deficient even in what is known as common school education. There are in the United States 116 medical schools. According to their announcements 89 exact certain educational requirements, but 19 of these require no more than they can help. It is futile to endeavor to directly influence medical colleges to make these requirements. It can only be obtained by awakening in the mind of the profession and people a sentiment that a definite preliminary education is necessary to the medical student.

DR. A. L. GIBON, U. S. N., offered the following resolution, which was adopted:

Resolved, That the American Academy of Medicine expresses its high approval of the aid afforded to the cause of higher medical education by the College of Physicians and Surgeons of New York, in its recent requirements for matriculation, which it commends to the profession as worthy of adoption.

DR. J. C. WILSON, of Philadelphia, read a paper on

THE CAUSES AND PREVENTION OF THE OPIUM HABIT AND KINDRED AFFECTIONS.

These affections are prevalent to a large extent, though there are no reliable statistics concerning their frequency. The causes may be grouped under three heads: First, example, as shown in the case of those who become opium eaters through the example of friends. Second, suggestion, as is shown in those who fall into these habits through the reading of literature concerning it or from familiarity with the drugs, as in the case of doctors, druggists, nurses and students of medicine. A large proportion of individuals who are led by these causes to contract such habits, do so in the absence of sickness or physical pain. Third, medical prescriptions. It is an unfortunate fact that the greater number of the victims of habitual vicious narcotism become so through the prolonged abuse of narcotics originally prescribed for the relief of pain. Among

the measures suggested for the prevention of the formation of such habits were, first, the dissemination of a wholesome knowledge of the methods by which the opium habit and kindred affections are induced; of the serious character of these affections, and of the dangers attendant upon an ignorant and careless employment of narcotics. Second, a reasonable and temperate presentation of the facts in the popular works upon hygiene. Third, the exercise of every possible precaution on the part of physicians in prescribing narcotics. It is good practice to keep the patient in ignorance of the character of the anodyne used and of the dose. Physicians should personally control, as far as possible, the use of such drugs, and see that they are taken infrequently and in the minimum amounts capable of producing the desired effect; the occasional alternation of anodyne medicaments is desirable. Prescriptions for drugs of this kind should not be renewed by druggists without the written order of the physician. Finally, a merely palliative treatment should not be allowed to assume too great importance in the management of curable painful affections. Under no circumstances, except in the final stages of hopelessly incurable painful affections, should the hypodermic syringe be placed in the hands of the patient. Uniform and efficient laws to regulate the sale of narcotic drugs are desirable. Existing laws relating to this subject are a dead letter; they are neither adequate to control the evil, nor is their enforcement practicable.

DR. R. L. SIBBERT, of Carlisle, Pa., thought the physician should not tell what he is giving when he prescribes opium. He also thought that we should never write a prescription in which the word opium appears.

DR. LEARTUS CONNOR considered it unsafe for the physician to administer a narcotic in his own family. He could give a large number of instances where the wives and other members of physicians' families had become addicted to the use of opium in this way. It is unsafe for the physician to administer opium to himself.

DR. THEOPHILUS PARVIN, of Philadelphia, read a paper on

THE IMPORTANCE OF PRACTICAL OBSTETRICS IN THE COURSE OF INSTRUCTION GIVEN BY MEDICAL SCHOOLS.

A recent visit to Munich, where he spent some time observing the method of teaching obstetrics in the University of Munich pursued by Professor Winckel, made him conscious of the great deficiencies of the American plan of obstetric instruction. The science of obstetrics is admirably taught in our medical schools, by pictures, models, illustrations of various sorts, with preparations of pelvis, etc., but the vast majority of American medical students graduate without having witnessed a case of labor. In many medical schools

the diagnosis of pregnancy by auscultation and by palpation is not taught, so that the graduate sees with his own eyes and feels with his own hands. There is also reason to believe that the mortality of private practice is greater than that of hospital practice. Then, too, the unqualified obstetrician contributes largely to the work of the gynecologist. While attendance on poor women at their homes is better than no practice at all, yet the student will derive more benefit from the study of cases collected in a maternity hospital, where many cases can be studied under the instruction of a competent teacher. The practical teaching of obstetrics is to be directly associated with its scientific instruction. There should therefore be a maternity belonging to every medical school in which obstetrics is taught. In large cities there would be no trouble in obtaining sufficient material for this method of teaching. Through the efforts of the author, the Trustees of the Jefferson Medical College authorized the establishment of a maternity department in connection with the hospital. Thirty-four women have been confined without a death. The room being insufficient an outdoor department was established. Here there has been 151 applicants, 106 have been confined, with but one death. This occurred two weeks after labor. The cause of death was not positively ascertained.

Dr. Parvin then described the methods employed at the Munich University, basing his remarks on a report furnished by Dr. J. Clifton Edgar. Obstetrics is there taught by (1) didactic lectures, (2) obstetric clinics, (3) touch courses, (4) operative courses on the phantom, (5) management of labor cases, (6) bedside instruction in the puerperal wards. The student is required to attend obstetrical clinics for nine months. In that time he would at a low average thoroughly examine eighteen gravid or parturient women and to deliver four women.

In concluding Dr. Parvin said: "Why would it not be wise for this Academy, which should be a light and a guide to the American profession, leading it to higher and giving in larger views on those duties and responsibilities, with hearty unanimity declare that practical obstetrics should be made a part of the regular course in every medical college? With the seal of your approval those who are laboring to this end will be given strength and hope."

AFTERNOON SESSION.

DR. F. H. GERRISH delivered the
PRESIDENT'S ADDRESS.

Reference was first made to the necessity for something more than a mere grammar school education as a preparation for the study of medicine. The course of a student without proper preliminary education was traced at length. Until re-

cently any male of the human species, who would pay the necessary fees, found no difficulty in entering. A few years ago several medical schools established a preliminary examination. This was attributed by the speaker largely to the action of the Illinois State Board of Health, to the effect that if the schools wished their diplomas to be recognized in that State, they must have a preliminary examination. He thought that the labors of the Academy should be rather to elevate the standard of medical education rather than the investigation of scientific problems.

The President then referred to certain amendments which had been proposed at previous meetings. One of the Amendments considered, related to Asst. VIII, Sec. I, which now reads: "The Fellows of the Academy in their relations with each other and with their fellow men, agree to be governed by the principles embodied in the present code of ethics of the American Medical Association, and by the constitution and by-laws of the Academy." The amendment suggested "The Fellows of the Academy will be governed by those principles which actuate educated, cultured and honorable men in every profession, and by the constitution and by-laws of the Academy." Dr. Gerrish favored the adoption of the amendment.

Never before had it been appropriate to address the Academy as "Ladies and Gentlemen;" but to-day it was his privilege to use this significant expression. It is not creditable to our country or in keeping with the liberality which therapeutically characterizes our institutions, that a discrimination should so long have been made against women in scientific associations. It is noteworthy that some of the staunchest upholders of a strict preliminary examination as ascertained by the detective work of our committee on the subject last year, were the schools managed by women.

Since the last meeting, the grave had closed over several members of the Academy, and the speaker spoke briefly of the various deceased members.

In order to facilitate the procuring of essays for the annual meetings, it was suggested that a special committee charged with this work be appointed. In reference to the Congress of American Physicians and Surgeons, he thought it advisable for the Academy to consider the expediency of associating itself with the other societies composing the Congress, thus bringing it into more prominent notice than it has hitherto enjoyed.

DR. R. LOWRY SIBBETT, of Carlisle, Pa., read a paper entitled

A FEW WORDS CONCERNING THE ACADEMY.

The Academy was organized in 1876, at a time when the standard of medical education was at its

lowest point. Medical institutions were numerous and their doors thrown open to all, irrespective of qualifications. There were at least also a dozen of so-called diploma mills. It was at this period that the Academy began to explore these novel methods of manufacturing medical practitioners. The addresses by the President and the papers by the Fellows have generally been on some branch of this semi-medical subject and widely distributed among professional and educated classes. These addresses have also pointed out the true and only method by which men may become safe and honorable practitioners. The Academy has strongly insisted upon the necessity of preliminary education. At the time of the organization of the Academy in no State were there laws relating to the practice of medicine that could be enforced. Most of the States now have laws which can be carried out and many have State Boards of Examiners. Graded courses have been adopted in the best medical schools, with preliminary examination and frequent written examinations. The "diploma mills" no longer exist. This is the only Association in which the addresses referred to could have been made, because the sentiments expressed in them have been too much at variance with the sentiments of the majority of the profession.

The Academy is the only society in which an academy qualification is required. There are three departments of activity indicated in the organic law of the Academy, (1) the reading of papers on what may be called the higher science of medicine, (2) the exposure of imperfect methods of medical education, and (3) the bringing into the Academy of eligible members of the profession. The Academy had set a high standard for admission, but he believed that the doors should not be closed against those eminent practitioners who although they did not possess the degree of A. B., had pursued protracted courses of preliminary study in literary schools.

Dr. George Jackson Fisher, of Sing Sing, N.Y., read a paper entitled *The Famous Historic Masters of the Healing Art were Men of Classical Education*.

Dr. L. Duncan Bulkley, of New York, read a paper on *The Relations between the General Practitioner and the Consultant or Specialist*.

WEDNESDAY, NOVEMBER 14,—SECOND DAY.

DR. CHARLES CARROLL LEE, of New York, read a paper on

THE NECESSITY FOR POST-GRADUATION INSTRUCTION IN THE PRESENT STATE OF AMERICAN MEDICAL EDUCATION.

The first Post-Graduate Medical School was opened in New York in 1882. There are now six in operation in different medical centres. These courses are attended by practitioners anxious to

brush up on certain subjects. Some of the colleges strive to provide clinical instruction for medical men but the means at their disposal are not sufficient to provide the instruction required by practitioners. The post-graduate schools are continually increasing in popularity. Here the student in any particular branch is able to devote his entire time to that subject. He is also able to follow the practice of a number of experts, instead of being bound down to the methods of a single medicine. For one mature enough to observe and judge for himself, the benefit of this is obvious. It is difficult to conceive how London, Berlin, or Vienna, can offer greater facilities for clinical teaching than are to-day available in this city. To the medical teacher a frequent European visit is desirable, not only to perfect his methods of instruction but to liberalize his mind, but the time has arrived when if the American teacher of medicine does his whole duty the American student should lack no practical knowledge of his profession.

The consideration of the following

AMENDMENT TO THE CONSTITUTION

was taken up: "The Fellows of the Academy will be governed by those principles which actuate educated and honorable men in *every profession*, and by the constitution and by-laws of the Academy." After a prolonged discussion, the amendment was laid on the table for one year.

The following resolution was presented by the Council and adopted: That the Academy heartily endorses the suggestion of Dr. Parvin, in his Address, that *practical obstetrics* should be made a part of the regular course in every medical college.

Dr. HOSMER A. JOHNSON, of Chicago, read a paper on

THE INFLUENCE OF THE WORK OF THE ILLINOIS MEDICAL PRACTICE ACT UPON MEDICAL EDUCATION.

The Illinois State Board of Health was created in 1877. One of its first acts was the passage of a resolution that the diploma of a college graduating two classes in one year would not be considered in good standing after July 1, 1878. This compelled some of the prolific schools to adopt a single graduating term. In 1880 the Board made a study of requirements of medical schools. In 1884 the Board adopted a schedule of the minimum requirements for graduation in the State of Illinois. This has led to an increase in qualifications required by many of the schools. There are now 114 colleges which require evidence of preliminary study as a condition of admission. In 1883 there were only 45. Forty-three colleges now exact a three years' course, as compared with 22 in 1883. The Board has now adopted a resolution defining the phrase "medical colleges in good standing" to mean "only those colleges

which shall, after the session of 1890-91, require four years of professional study, including any time spent with a preceptor, and three regular courses of lectures, as conditions of graduation, and shall otherwise conform to the schedule of minimum requirements heretofore adopted by the Board.

The Treatment of Uterine Disease by other than Surgical Means, by Dr. W. F. Waugh, of Philadelphia, was read by title, as was *The Evils of a Medical Dialect separated widely from Classical English*, by Dr. Edmund Andrews, of Chicago.

The following were elected

HONORARY MEMBERS.

Dr. J. H. Rauch, Springfield, Ill.; Sir Joseph Lister, London; Sir Spencer Wells, London; J. Lucas-Championnière, Paris; Dr. H. D. Didama, Syracuse.

The following were elected

OFFICERS FOR THE ENSUING YEAR.

President—Dr. Leartus Connor, Detroit.

Vice-Presidents—Drs. Peter D. Keyser, Philadelphia; L. Duncan Bulkley, New York; Theophilus Parvin, Philadelphia; George J. Fisher, Sing Sing, N. Y.

Secretary and Treasurer—Dr. Richard J. Dunghison, Philadelphia.

Assistant Secretary—Dr. Charles McIntire, Jr., Easton, Pa.

Place of Next Meeting—Chicago, Ill.

ASSOCIATION ITEMS.

Committee on Dietetics.

CIRCULAR NO. 1.

The Committee on Dietetics appointed by the American Medical Association will hold its next session at Newport, R. I., during the meeting of the Association.

It is thought that the greatest good would result by directing discussion to a single class of dietetic subjects; the committee, therefore have agreed that the papers to be restricted to the consideration of the topics relating to "The Collection, Preparation and Serving of Food for the Family;" and that the Report of the Committee for 1889 shall be limited to the presentation of that class of subjects."

As one topic, among others, belonging to this class, and as one of vital importance to our Nation, it is respectfully suggested that special attention be given to the consideration of the best kinds of food, methods of preparation, and modes of feeding, especially for infants and young persons, to improve the American race.

Papers that may treat of other dietetic subjects

may be read, but will not be incorporated in the annual Report.

The sessions of the committee will be public and open to all who may wish to participate; and any member of the Association may offer a paper for consideration, or take part in the discussions. This new departure, it is hoped, will appeal strongly to those, who, by study and observation, have earned the right to be heard on the subject of dietetics.

While the discussions will be open and free, it is respectfully suggested to all who intend to participate, that the papers should be brief and practical, so as to afford time for their discussion. Each paper should be confined to some specific topic bearing upon the class of subjects under consideration by the committee. What is wanted is not so much variety of themes as fulness and clearness on special topics, in order that precise deductions may be established which shall possess permanent value, and which may in some measure serve as a plain and reliable guide for the busy practitioner.

Papers by eminent men are already announced, and others are promised. The titles of all papers to be read, with the names of the respective authors, will be given through the medical journals. E. A. WOOD, M.D., Chairman,
Pittsburgh, Pa.

FRANK WOODBURY, M.D., Sec'y.,
Philadelphia, Pa.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Effects of Stramonium—Climate and Mortality in Great Britain—Verdi's Hospital at Villanova—Anisic Acid a Substitute for Salicylate of Soda—Encysted Calculus—Case of Malingering—Buildings of the Cremation Society—Effects of Pepper and Mustard on Digestion.

A surgeon of the Army Medical Department records the case of a man found insensible at a village in Upper Burmah, who on partially waking out of his stupor, showed symptoms of violent insanity. It seems that about a week previously, he had both chewed and smoked some leaves of the stramonium plant, which had caused first a feeling of sickness and nausea, and then stupefied him. Some amelioration was produced by the administration of forty grains of bromide of potassium, but the patient managed to escape from the military hospital before very much could be done with him.

The climate of the British Islands has been the subject of a good deal of raillery by the unintelligent foreigner, but certain statistics of European

mortality which have just been compiled are calculated to show in favor of the British Isles. The United Kingdom after all is the healthiest country in Europe. The rate of mortality in the Roman and Venetian State is 4 in 28, in Greece and Turkey 1 in 30, in Switzerland, Austria, Spain and Portugal 1 in 40, in European Russia and Poland 1 in 44, in Germany, Denmark and Sweden 1 in 45, and in Norway 48. In England the rate of mortality is only 1 in 58, in Ireland it is 1 in 53, and in Scotland 1 in 59.

Interesting accounts have recently appeared of the hospital recently opened at Villanova, and entirely built and supported by Verdi the Composer. Villanova is in close vicinity to the country seat which Verdi has made his home and where he lives in the manner of a farmer, abandoning all music from his thought, and without so much as a piano in his house. The new hospital, an unpretentious but large building, lies in a commanding situation overlooking the Po and with a distant view of the Apennines. There are two wings, one for women, the other for men, and a separate ward is set aside for contagious cases. There is also a hydropathic establishment, and most elaborate arrangements have been made for the disinfection of linen. An efficient staff of nurses and attendants is also provided, and Signora Verdi has made the housekeeping department her special care. The large sums required have been contributed by Verdi, who has also deposited sufficient funds for the maintenance of the hospital. At the opening ceremony only Verdi and his family and the physician were present. No speechifying was allowed, Verdi remarking that the only inauguration necessary was the admission of the sick and ailing, twelve of whom were received then and there.

Anisic acid is talked of as a substitute for salicylate of soda, in the treatment of rheumatism, neuralgia, etc., and as an antiseptic for the preservation of animal and vegetable substances. This product has long been known to cultivators of organic chemistry, it was originally obtained by oxidizing the essential oil of anise, by means of nitric acid, but more recently it has been obtained from some derivatives of the coal tar products. This new product is about to be introduced into therapeutics. It is supposed that it can be given in the same doses as salicylic acid or salicylate of soda, to which the anisate of soda corresponds. At present, however, very little is known with regard to its capabilities as a medicament, but some clinical observations are being made in cases in which the compounds of anisic acid have been administered. It is hoped that they will be found as effective as salicylate of soda without its after effects, or head and cardiac symptoms.

The most interesting case of encysted stone has recently been under the hands of Mr. E. H. Fenwick. The calculus could be felt bi-manually,

and was diagnosed to be hour-glass in shape. The smaller piece was found projecting into the bladder at the level of the left urethral orifice, weighed one ounce and a half, and the larger portion lying in a diverticulum outside the back and base of the bladder; this portion was four ounces and a half in weight, and the size and shape of a large hen's egg. The two portions were connected by a very slender neck. The vesical piece was easily broken off, leaving the neck protruding from the small opening of the diverticulum. The position of the opening rendered much dilatation of it dangerous. It was therefore impossible to extract entire the encystic portion. Attempts to crush it by means of lithotrite or forceps failed. A chisel was then guided through the orifice of the diverticulum and laid upon the stone, elastic counter-pressure was afforded by Petersen's rectal balloon. The stone was then cut through by repeated blows with a mallet. After much careful manipulation, the stone was chiselled into sufficiently small fragments to allow of their being extracted through the orifice. The wound rapidly healed, and in six weeks the patient left Mr. Fenwick perfectly cured.

In the report of the medical officer of Wormwood Scrubs Prison, just published, is given a remarkable case of malingering. A prisoner had, prior to his imprisonment, been for some years considered as quite disabled by a spinal injury, which was an actual fact at first, consequent upon a severe accident. When he was received at Wormwood Scrubs there were features in his case which led the doctor to doubt the genuineness of his then present symptoms, and it was thought that he had recovered from the effects of his original injury to a far greater extent than he was willing to allow. He was, therefore, treated in such a manner as to impress upon his mind the fact that considerable doubt existed as to his real disability to move from his bed. Ultimately finding that few hospital luxuries were given him, after lying in bed as a hopeless paralytic for more than ten weeks in the infirmary, he presented himself at his cell door one morning, having made his bed and put his cell in order. He asked to immediately be let out of the infirmary, and to be allowed to "work like a man," throwing away at the same time with scorn, the surgical support which he had worn day and night for so long a time.

The building of the new chapel, waiting-rooms and lodge in the grounds of the Cremation Society, at Woking, is approaching completion. Fifty-one bodies have already been cremated. The erection of a crematory at Leicester for the Midland Counties is to be considered at a public meeting, and in Glasgow the Scottish Burial Reform and Cremation Society, formed last August, are arranging for the immediate erection of build-

ings, including a chapel and columbarium, on a picturesque site adjoining the cathedral.

The annual course of the Brown Institution lectures will be delivered by Mr. Victor Horsley, at the University of London, on the subject of "Epilepsy."

From some recent experiments it appears that digestion is retarded from about half to two and a half per cent. by pepper, whilst mustard has either no action whatever upon the gastric functions, or but very slightly accelerates them.

G. O. M.

SOME PARIS CLINICS.

(FROM OUR SPECIAL CORRESPONDENT.)

Apostoli's Clinic—Verneuil's Clinic—Charcot's Clinic—Therapeutic Notes.

Dr. Apostoli has a clinic for diseases of women, with special reference to the treatment of such conditions with electricity, on Monday, Thursday and Saturday, at half-past two, Rue du Jour, No. 19. I consider this to be, in many particulars, the best gynecological clinic in Europe, either: 1st. For those who wish to examine a great variety of rare as well as of ordinary cases; 2d. For those who wish to study intelligently and honestly recent methods in conservatism.

Those who have raised objections to his method have done so, 1st, from theoretic reasoning; 2d, from a want of success, due probably to a want of exactness in following out necessary directions. A man is apt to believe the evidence of his own eyes, and the testimony of a multitude of reliable witnesses can be disputed only upon the ground of defective eye-sight, defective diagnosis, defective balancing of *post hoc* and *propter hoc*, or of illogical deductions of enthusiasm. Even the most bitter agnostic, be he honest and well-balanced, would hardly ascribe this congregation of psychoses to a group, however justly they might apply to an individual. Theoretical fancies, in the face of clinical facts to which they oppose themselves, can carry no force. Such theories have concerned themselves chiefly with *immediate* electro-chemical action, forgetting the *continued* intra-polar molecular action, which is the important factor of all electrization.

This is what the gynecologist aims at in the galvanic treatment, and galvano-caustic treatment of myoma. He does not expect as much from the immediate puncture as he does from the effect upon the molecules between the poles—the inter-polar zone—which effect is progressive. The advance of a great science cannot be arrested by a doubtful smile. If it be of value, it will pass onward and upward, even if it should do so over a multitude of dead opinions and languishing individualisms.

Ovarian pain, generally hysterical, pain con-

fined to the ovary and not experienced elsewhere. This is treated with the bi-polar Faradic current, generated from a *fine* wire battery, which gives a higher tension. The rubber cone, about as large as a Simpson's uterine sound, tipped at the point with platinum, holds both the positive and negative poles, to which the currents are carried through a square base. Such cases as these always profit immediately by the application. It soothes the pain at once. The question I raised with Dr. Apostoli was, whether such an isolated pain might not be the evidence of a generally unstable psychic condition which could be met more intelligently by constitutional treatment; whether such pain, though felt in the ovary, might not be due to a disturbance of the higher centres—a misinterpreted pain, so to speak—since absolute pain of an organ could only really exist with actual disease. That Faradism for a reflected neurosis could not be permanent, unless the condition *reflecting* it, could also be reached and benefited. However, apart from such metaphysical reasoning, uterine bi-polar Faradism *always* arrests the pain.

Hæmorrhage from Tumors.—Apostoli has not failed in a single instance, during my term of observation, in perfectly arresting these blood-losses after one, two, three or more sittings. I have seen him carry the current to 150 or 200 milliamperes, the positive *carbon* point in the uterus, the negative attached to a belly-pad of potter's clay. I have not seen a woman complain of anything more than a slight uneasiness, though a current of 200 milliamperes was used. A sitting lasts ten or fifteen minutes, and the carbon electrode is withdrawn from the fundus toward the cervix, so as to include, as far as possible, the whole interior surface of the uterus. There are certain cases where the negative pole is used within the uterus, in order to get primarily a *destructive*, and secondarily a *cicatricial* effect. If it shall be demonstrated beyond all question of reasonable doubt that the clinical symptomatology of myoma ceases to become prominent after the application of galvanism, without endangering life, we have reached a plane of scientific progress higher than that occupied by the laparotomist; and I can conceive of no necessity for the dangerous operation, if there be no discomfort from the tumor.

Salpingitis.—I have seen three cases of catarrhal(?) salpingitis, and two of gonorrhœal salpingitis, very happily treated with galvanopuncture. One case I saw who bore a child after being treated by Apostoli for a number of months for a salpingitis.

Other Conditions.—A woman came into the clinic the other day, with a tremendous peri- and parametritis filling up the fornices, and due to a specific salpingitis. In acute perimetritis Apostoli does not hesitate to use Faradism in the uterus, but he does it with the greatest care possible.

In this case, owing to the purulent discharge, he used the galvanic current, + pole in the uterus, and a current of 100 milliamperes, which the patient bore well. Later he uses galvanopuncture. The case is a grave one. The bugbears of gynecology, chronic para- and perimetritis, are admirably conquered by from 50 to 150 milliamperes of galvanism. I saw Engelmann over and over again relieve such cases in Berlin.

Verneuil's Clinic.—A man came into La Pitié whose index finger had been torn off by a machine just above the first phalanx. The whole hand was kept constantly immersed in a large basin of 2 per cent. carbolized water. Nothing more: Professor Verneuil said, that during his practice of over forty years, he had only amputated a finger in perhaps four instances, because he considered it exceedingly bad practice. These cases all did well when treated by the antiseptic bath; and that it was not good surgery to amputate in these cases of suppuration. He also demonstrated a man, whose prostate he had *scraped* for tuberculous disease, and who was doing well. Another most instructive case, was one in which a man was unable to swallow by reason of œsophageal constriction, but who was fed through the nares, by means of a very ingenious tube. This same arrangement he proposes trying on a man whose tongue he will extirpate for cancer in a few days. Operate early, operate largely, take out all suspected material and feed intelligently, are the points upon which he insisted, as he lectured upon cancerous disease of the tongue. Professor Verneuil offers the following conclusions as to the transmission among men of tetanus:

1. Human communicability is not substantiated by a sufficient number of cases.
2. If transmission does not seem to depend upon the atmosphere, but upon contact, direct or indirect.
3. We have no decided case of record to bear out the theory of immediate contagion, many clinical observations attest the truth of the second, or indirect form.
4. It is very difficult to trace the route through which the contagion has been carried from the first case to others.
5. It behoves us to study with patience this question so pregnant with importance.

Charcot's Clinic.—Professor Charcot has a clinic at nine o'clock, Tuesday and Saturday at La Salpêtrière. On Tuesday he lectures upon a given case, and upon Saturday the wards are visited. Whatever opinion we may have as to the permanent value of Charcot's work two facts are indisputable: 1. The large intelligence and thorough mental equipment of the man. 2. The number of rare cases. These cases are rarely seen outside of La Salpêtrière, for some reason unknown, and which Charcot himself, only a day or two ago,

said was to him an enigma. But apart from the hystero-epileptics, there came here cases of the largest possible interest to the neurologist. I have listened to two conferences, one on *homonymous hemipia and crosses amblyopia*, and the other in *left-sided sciatica*, and I was greatly struck both by the originality displayed by the Professor in illustrating the cases, by his acuteness of diagnosis, and by the large scope of his research. Incidentally, he alluded to the operation of oöphorectomy for the alleviation of hysterical symptoms, and I was glad to find myself sustained in the point I raised at the 9th International Congress, that such operative procedures were irrational, based neither upon sound physiology or pathology, by a man of such eminence. What neurologist is great enough to diagnose peripheral ovarium hysteria, with derangement of the brain, when neither before the operation, nor after the entirpation of the ovary, nor perhaps after death from the operation, can the microscope discover any pathological lesion? What is the primary lesion? Is it not much more natural to suppose that the mischief is in a higher ganglia, and that the ovary suffers only as a reflex periphery.

Therapeutic Notes.—M. Constantin Paul is using saccharin in solutions of 1:250 and 1:500 as an antiseptic dressing in diseases of the eye. Dr. Rovighi, of Bologna, is advocating the use of strophanthus as an antipyretic. In four cases of consumption he reduced the temperature 2° to 3°. Dr. M. R. Cholewa treats coryza with an oily solution of menthol, 20 parts to 100. M. Henocque denies the activity of antipyrin and of acetanilide in the reduction of oxyhemoglobin. He is now experimenting with phenacetin. H. R. B. •

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Sudden Heart-Failure in Diphtheria.

Dr. J. Lewis Smith read at the first meeting of the Academy of Medicine in November, an admirable paper on "Sudden Heart-Failure in Diphtheria." Towards the close of his paper he examined by the light of clinical experience the prevailing theory that diphtheritic paralysis results from anatomical changes, peripheral or central, or both, in the nervous system, and to inquire whether it was adequate to explain the paralysis as it ordinarily occurs—whether cardiac paralysis or the other forms. The following he gave as some of the objections to it:

1. Cases occur in which carefully conducted microscopic examinations reveal an apparently normal state of the nerves supplying the paralyzed part and of that part of the cerebro-spinal axis from which the nerves arise.

2. Palatal paralysis sometimes occurs as early as the second or third day of diphtheria, and loss of the tendon reflexes as early as the first day; and it seems improbable that a peripheral neuritis or anatomical changes in the cerebro-spinal axis such as to cause paralysis should occur at so early a date.

3. In its commencement diphtheritic paralysis often exhibits what Trousseau designates as mutability; suddenly shifting from one group of muscles to another. It would seem impossible that there should be a sudden recovery from the paralysis, and then perhaps on the following day a recurrence of it, if it resulted from degenerative nerve changes, either central or peripheric. A persistent cause should produce a continuous effect.

4. Microscopists who have discovered degenerative changes in the peripheral nerves supplying paralyzed muscles, state that while some of the nerve-fibres have undergone complete or nearly complete degeneration, others have been affected with only partial degeneration, and still others seem to be intact; a condition which would hardly account for the complete paralysis often met with, as, for instance, in the velum palati.

5. Diphtheritic paralysis, both motor and sensory, is frequently limited to the parts supplied by a single branch of a nerve, while all the other branches preserve their normal function. This fact, while not antagonistic to the theory that peripheral nerve lesions cause the paralysis, affords a strong, if not conclusive, argument against the theory that central nerve lesions are the cause.

In the discussion on the paper Dr. A. L. Loomis said that he had been accustomed to regard diphtheritic paralysis and heart-failure as not always dependent on the same cause. In the early stages of diphtheria it had seemed to him that heart-failure was due to the direct action of the poison, whatever that might be, as was no doubt the case in other diseases, especially typhus fever, in which sudden death not infrequently occurred from this cause. When the accident occurred in the advanced stages of diphtheria he had considered that it was caused by peripheral neuritis, although he did not deny that there was possibly not a sufficient basis for such an assumption.

Dr. Beverley Robinson said that he was still of the opinion that cardiac failure in acute cases, in the majority of instances, was connected with the ante-mortem formation of clots in the heart, especially the right heart. When a hospital interne in Paris, he had made a large number of autopsies in such cases, and he had never found any lesions of the peripheric nerves. In his experience death did not always occur rapidly; the symptoms of heart-failure often continuing for a considerable time before the fatal termination. After death there would almost invariably be found fibrinous clots, and from their character he

believed that they were formed ante-mortem, and were to a greater or less extent the cause of death.

Dr. A. Caillé spoke of the importance of keeping all patients suffering from diphtheria, strictly confined to bed, and of giving them sufficient stimulus, for the purpose of counteracting, as far as possible, the tendency to heart-failure. He also mentioned one case in which fatal heart-failure was apparently brought about by an error in diet.

Dr. Seibert expressed the opinion that heart-failure occurring in the early stages of diphtheria was due to the direct action of the poison of the disease upon the central nervous system, and that when it developed later on it was due to pathological changes in the cardiac muscles. In all the cases that he had known of, the attack was brought on by the attempt of the patient to make some exertion.

Dr. A. Jacobi said that it was probable that some of the sudden deaths in diphtheria were due to syncope, the result of anæmia of the brain brought about by exertion, as was sometimes the case in pneumonia. There was one peculiar condition that might be mistaken for heart-failure in the later stages of diphtheria, viz.: paralysis of the muscles of respiration. It usually followed the other forms of paralysis, and was characterized by shallow respiration, with a good deal of resulting dyspnoea and rapidity of the heart's action. In such cases electricity in short sittings, and strychnia by hypodermic injection, are the most efficient means of treatment. Being aware of the tendency to fatal heart-failure in diphtheria, it was the duty of the physician in every case of the disease to do all in his power to guard against such an accident. The indications are to save the strength of the patient by feeding and tonics, and especially to fortify the heart by means of alcohol and such agents as digitalis, spartaine and strophanthus. In every case of diphtheria we had to deal with sepsis, and alcohol was therefore of the highest possible value. He believed that no patient with this disease could be injured by alcohol, and that even the most courageous physicians often erred in not giving enough of it. If the choice were offered him between alcohol and all other remedies in diphtheria, Dr. Jacobi said he would unhesitatingly select the former as affording the best chance to the patient. In brief, then, the indications for the prevention of heart-failure are to save the strength, combat sepsis, and sustain the heart.

In closing the discussion Dr. Smith said that, since the stomach and lungs, as well as the heart, were implicated, the inference was that the cause of the trouble was some affection of the nerve supplying the three organs, the pneumogastric. It was a fact that a certain proportion of those attacked with heart-failure recovered, and that in some of those who died there was for a time an

amelioration of the symptoms; and it seemed to him that this would not be possible if the trouble were due to heart-clot, which would undoubtedly be a permanent condition, unaffected by any treatment that might be adopted. It was also a fact that paralysis of some form almost invariably preceded the heart-failure, and this would seem to indicate that the latter was due to the same cause as the paralysis.

P. B. P.

Spontaneous Paracentesis Abdominis at Umbilicus, in Anæmic Ascites.

WITH LARGE MULTINODULAR FIBROID TUMOR OF UTERUS.

Dear Sir:—Never having met with a recorded case of the above complication, I present a report of the same, owing to its extraordinary rarity. Several years since, I attended Mrs. — for metrorrhagia, coincident with the development a large fibroid tumor of the uterus. Her general condition consequently was not good, yet she could exercise and had a fair appetite. Later, her circulation became impoverished, resulting in general anæmia, some anasarca, with ascitic accumulation, ultimating in an immense circumference or rotundity. This condition has existed for several months. She looks cadaverous, yet has a voracious appetite. Dyspnoea and the usual concomitant of such a state of health, are present, not to an intolerable extent however. On August 5, I was summoned to attend her. I examined the abdomen. I found the umbilicus protuberant, of six inches in diameter, similar to *hernia umbilicalis* (yet there was no hernia), only the dropsical infiltration, which had found an outlet through the parietes of the umbilicus, sufficiently large to admit the exit of a drop of the fluid which continued to drop, guttatim. Nothing was to be done, hence I advised non-interference. Drainage would continue to the level of the orifice, and possibly closure would be effected, yet the enfeebled structure would give away under the heavy recurrent pressure. Considering the adhesions existing between the tumor and the peritoneum, and the self-evident malignancy of the same, extirpation could not be entertained; hence, she will be compelled to endure the same until death comes to her relief.

GEO. N. MONETTE, M.D.

17 Prytania St., New Orleans.

"What is the Matter with the Candle Test of the Visual Field?"

Dear Sir:—It seems hardly right to be making a fuss over anything so presumably well-known and generally used as the candle test of the visual field. But Dr. Cheatham's pertinent query (JOURNAL, November 17) in connection

with Dr. Chisolms' report can, I regret to say, be applied to other cataract operations—as in the following instance:

In some years past I have had under observation a patient (senile) who had chorio-retinitis in the left eye and steady maturing cataract in the right. Recently the cataract became fully matured and the question arose as to an operation. The chorio-retinitis in the left eye had been for some time at a standstill and there was fair eccentric vision sufficient for getting about, self-help at the table, etc., but not for reading or writing with any satisfaction. My patient was naturally not content in this condition and hoped for relief (at least to the extent of reading coarse print) through a successful extraction of the cataract in the other eye. I therefore made a careful examination by the candle test and finding that the light was *not* quickly perceived and located (particularly at the center of the field) I was compelled to give it as my opinion that a successful extraction would not restore the reading power or much improve vision generally.

Later on my patient visited a neighboring city, was there given a more favorable prognosis, and submitted to the operation. The operation was neatly done and the healing normal. The patient returned home some weeks later, but after the lapse of several months the power to read had not returned, nor is it now expected. In the region of the macula, easily discernible with the ophthalmoscope through the unobstructed pupil is a large white patch (atrophy) similar to the one in the left eye, and whose presence I from the first suspected, through the failure to stand the candle test.

Dr. Cheatham's communication seems not to have been ill-timed. Respectfully yours,

H. B. YOUNG, M.D.

304 N. 3d St., Burlington, Ia., Nov. 19, 1888.

BOOK REVIEWS.

Second Annual Report of the STATE BOARD OF HEALTH AND VITAL STATISTICS OF PENNSYLVANIA, Transmitted to the Governor, Dec. 1, 1886. 8vo., pp. vi, 1056. Harrisburg: Erwin K. Meyers, State Printer. 1887.

As may be seen from the dates in the above title, the *accouchement* of the bodies politic that gave birth to this volume was perhaps painful and certainly protracted. The report embraces the operations of the Board for one year, and it has taken almost two years to get it from the Secretary, through the Governor, Legislature, and State Printer, to our desk. A note to the title page explains that "legislative permission for the printing of this report was not accorded until near

the close of the session of 1887. Thus it has required about a year to get the volume through the State Printing Circumlocution Office. May we not hope that the report for the year 1888 will be ready for exhibition at the time of the fourth centennial of the discovery of America—1892?

Part I of the volume (44 pages) contains the minutes of the Board. Part II is in the form of appendices, reports of standing committees, on Sanitary Condition of Cities and Towns, on Epidemics and Special Sources of Disease, of Inspections, of Quarantine and Disinfection, Proceedings and Papers of the State Sanitary Convention, Geographical Distribution of Consumption of Lungs and Malarial Diseases, by Dr. William Pepper, Legal Opinions and Legal Proceedings, Compendium of Laws relating to Public Health and Safety of Pennsylvania, and Decisions relating thereto, Sanitary Conferences, etc. This is scarcely more than a meagre synopsis of the table of contents.

As may be found in almost any report of this kind, there are plenty of texts for homilies on the penny wisdom pound foolishness of legislative bodies. The report of the Committee on Registration and Vital Statistics shows that the legislature failed to make reports on vital statistics compulsory, and that no provision was made for meeting the expenses of reporting to the Board. The report of the Committee on Water-supply and Drainage, Mr. Rudolph Hering, Chairman, is very full. The report on Public Institutions and School Hygiene contains a very suggestive and practical paper on alms house construction, by Dr. R. Lowry Sibbett, of Carlisle. Legislative weakness is again shown in the report of the Committee on Adulterations, Poisons, etc., the funds supplied the Board being insufficient to permit of any amount of work being done in regard to these matters.

The reports on the sanitary condition of cities and towns cover Towanda, Altoona, Bethlehem, drowned lands in Luzerne Co., Allentown, Bristol, Blairsville, and Johnstown. We are glad to see that Dr. Germer calls attention to the polluted drinking water on board passenger cars. There is absolutely no excuse for this, and we hope that some of our legislative bodies will come to their senses long enough to correct this evil.

The reports on Epidemics and Special Sources of Disease include reports on a fatal outbreak of trichiniasis at Bethlehem, and several outbreaks of smallpox and typhoid fever. The reports on Inspections cover a large number of places. Under reports on Quarantine and Disinfection is a report on Japanese rags; and one on the quarantine of smallpox in the Port of Philadelphia, by Dr. Benjamin Lee, Secretary of the Board.

At the sanitary convention held at Philadelphia in May, 1886, thirty-two papers were read, all of which are printed, and we fear buried, in this re-

port. We would call the attention of the Pennsylvania Board to the manner in which proceedings of sanitary conventions in Michigan are printed by the Health Board of that State. For aught we remember to the contrary, the proceedings of this convention may have been published separately; but memory is sometimes a little clouded in regard to historical events. These papers, which cover more than 200 pages are too valuable to be buried in a large, not generally accessible report, as is the case with Dr. Pepper's masterly contribution to the "Geographical Distribution of Consumption of the Lungs and Malarial Disease in the State of Pennsylvania." This, however, has been issued in separate reprint.

For reference the "Compendium of the Laws relating to Public Health and Safety of the State of Pennsylvania, together with decisions of the Supreme Court and County Courts relating thereto" is very valuable. Another appendix contains correspondence relative to regulations for the transportation of dead bodies in the different States of the Union.

Taken altogether, this report is a most creditable one. The Pennsylvania Board, like almost every other Board that has no money for purchasing legislative influence, has been hampered by legislative restrictions and inactions. Scarcely had it begun its work before it was called upon to show cause for its establishment. The present volume is an answer to that question, and a complete answer; and we venture the assertion that if the people of the State of Pennsylvania have any cause for complaint, they must find fault with their representatives in the State Legislature. So far as we can see the Board has done its duty to the best of its ability. We hope that the report for 1887 will appear before the last quarter of 1889.

The Physician's Leisure Library. *THE THEORY AND PRACTICE OF THE OPHTHALMOSCOPE.*

By J. HERBERT CLAIBORNE, Jr., M.D. Detroit: Geo. S. Davis. 1888. Chicago: W. T. Keener.

Dr. Claiborne's little book consists of eight chapters; the first three are devoted to the principles of optics as a preface to the better understanding of the scientific use of the ophthalmoscope. The other chapters treat of the construction of the instrument, its use by the direct and indirect methods, the detection of anomalies of refraction, and the normal and pathological state of the eye. Much attention is devoted to the vessel and shadow test. The latter method is generally employed in England, and according to the author's opinion should receive more recognition in our own country. The work is clear, concise and practical. It contains a great deal of information. It is formulated in such a manner as to prove a guide and instructor to the student while examining the patient.

MISCELLANEOUS.

TO MEDICAL MICROSCOPISTS.—In behalf of the "American Association for the Study and Cure of Inebriety" the sum of one hundred dollars is offered by Dr. L. D. Mason, Vice-President of the Society, for the best original essay on "The Pathological Lesions of Chronic Alcoholism Capable of Microscopic Demonstration." The essay is to be accompanied by carefully prepared microscopic slides, which are to demonstrate clearly and satisfactorily the pathological conditions which the essay considers. Conclusions resulting from experiments on animals will be admissible. Accurate drawings or micro-photographs of the slides are desired. The essay, microscopic slides, drawings or micro-photographs are to be marked with a private motto or legend and sent to the Chairman of the Committee on or before Oct. 1, 1890. The object of the essay will be to demonstrate: *First*, Are there pathological lesions due to chronic alcoholism? *Secondly*, Are these lesions peculiar or not to chronic alcoholism? The microscopic specimens should be accompanied by an authentic alcoholic history, and other complications, as syphilis, should be excluded. The successful author will be promptly notified of his success, and asked to read and demonstrate his essay personally or by proxy, at a regular or special meeting of the Medical Microscopical Society, of Brooklyn. The essay will then be published in the ensuing number of *The Journal of Inebriety* (T. D. Crothers, Hartford, Conn.) as the prize essay, and then returned to the author for further publication or such use as he may desire. The following gentlemen have consented to act as a Committee: Chairman, W. H. Bates, M.D., F.R.M.S., Lond., Eng., (President Medical Microscopical Society, Brooklyn), 175 Remsen St., Brooklyn, N. Y.; John E. Weeks, M.D., 43 West 18th St., New York; Richmond Lennox, M.D., 164 Montague St., Brooklyn, N. Y.

IMMIGRANT INSANE.—During October, 1888, among the insane taken charge of by Cook County, Ill., were the following: James Dargan, who left Ireland four months before, and was brought to America by his sister, after being discharged from the Irish police force on account of insanity; James Spain, three months from Ireland; Caroline Sauritzen, three months from Germany; Charles Koch, six months from Germany; Hannah O'Sullivan, residence Dublin, Ireland, but a few months in America. All these were, as far as could be ascertained, insane before coming to this country. The total contribution of insane paupers from Europe to Cook County amounts to fifty for this year alone. If the other principal cities of the United States are as generously treated by foreign governments we will be able to close all their asylums and poorhouses in a few years, and by making aldermen and county commissioners of foreign criminals their penitentiaries will be emptied into American political offices.—*America*.

PHYSIOLOGICAL MARRIAGE.—Taking part in the discussion of the "Matrimonial Question," which has become epidemic throughout the British Isles, even to the abatement of Irish grievances, the *British Medical Journal* remarks that "the remedy (for unhappy marriages) seems to us to lie not in weakening the stringency of the bond, but in providing that it shall be entered into with an adequate knowledge of all the conditions attached to it and willingness to submit to them. For this some amount of physiological teaching is indispensable, and there need be no difficulty in imparting it without the slightest danger to innocent minds. We are firmly convinced that, if unions were arranged in accordance with well understood scientific principles more often than they now are, we should hear less of the unhappiness or 'failure' of marriage."

LARD ADULTERATION.—The National Board of Trade has expressed itself pretty strongly on the subject of lard adulteration. It has adopted a preamble and resolutions proposed by the Chicago Board of Trade declaring that "large quantities of a compound made from the fats of various animals and vegetables" are "placed on the home market, shipped abroad, and branded as lard." It also expresses a fear that this practice may enable foreign refiners to induce the Governments of France and Germany to prohibit the importation of all American lard, "thus damaging our export trade and diminishing the consumption of honest lard at home, to the financial detriment of the agricultural interests of this country, which to-day own about 50,000,000 hogs, worth \$300,000,000, and further damaging America's good name in the commerce of the world."

When the statement that a compound made from the fats of "various animals and vegetables" is extensively made in this country, and exported as lard, is put forth with the sanction of the Chicago Board of Trade, it is likely to be believed, and it would not be very surprising if it should precipitate that action on the part of foreign Governments which the Board professes to fear. Foreign refiners can now go to their Governments armed with the preamble and resolutions adopted by the National Board and say: "Here we have an admission by the highest American authority in such matters that the stuff sent over here from America and sold as lard is a vile compound of the fats of we know not what animals—dogs and cats, it may be—and vegetable oils of which we are equally ignorant. Ought you not, therefore, to protect the public health by excluding all packages represented as containing lard coming from America?" Governments which have shown their willingness to seize upon any pretext for the exclusion of American products may not be disposed to resist an appeal so fortified.

The remedy proposed by the Board is the enactment of such laws and regulations by Congress as will compel all dealers and refiners to brand all adulterated lard as "compound lard," or in some way which will clearly distinguish the impure from the pure article. It is undoubtedly the right remedy, but it may come too late. At all events Congress ought to provide it without delay. It might have been better for the Board to adopt a recommendation in regard to adulterations generally and send a committee to Washington to represent to Congress the urgent need of prompt action in regard to lard, without putting forth a statement concerning adulterations which may do much harm before the proposed remedy can be adopted.—*Chicago Herald*.

HEALTH OF THE DISTRICT OF COLUMBIA.—Health Officer Townshend, in his annual report to the Commissioners for the last fiscal year, says the general health of Washington remains unimpaired, and the community has good reason to congratulate itself upon existing conditions. The total number of deaths was 5,040, of which 2,778 were white and 2,262 were colored persons. The mean average death-rate of the total population for thirteen years was 23.85 per 1,000, per annum, while for last year it was 22.40. The death-rate of the white population was 18.52, and for the colored, 30.16 per 1,000, per annum. The population upon which the death-rate is estimated is 225,000 souls, 150,000 white and 75,000 colored. There are 426 nuisances accredited to "ashes." He reiterates his recommendation for the removal of ashes at public expense. He considers the necessity for this paramount. He estimates that it would cost \$25,000 per annum. The Inspector of Plumbing regrets that Congress has not yet authorized the inspection of the plumbing in all houses used as dwellings. "Many of our public buildings are unsafe on account of unsanitary plumbing," says the Inspector, "and only occupied at the imminent risk of health and life."

Attention is called to the necessity for proper appliances for disinfecting bedding, clothing, etc. A general

revaccination is suggested, in order that the unprotected may be protected in the event of small-pox being introduced into our midst. This disease, though reported in twenty-one States in the last six months, has not gained an entrance into the District. Regarding the disposal of the dead, he says: In several of my reports I have called attention to the subject of the disposal of the dead, and I desire to reiterate, in terms as strong as possible, that, in my opinion, the time has well nigh arrived when this subject must be taken into earnest consideration. The days for cemeteries are passing rapidly by, and I believe ere long the few crematories which have been established in the United States will be largely multiplied.

He recommends the appointment of a chemist, an increased clerical force for his office, a larger appropriation for the removal of garbage, the establishment of a city wharf, arching of James Creek Canal, and the granting of marriage licenses put under the Health Office.

A BUREAU OF HEALTH.—Senator Gibson introduced a bill in the Senate, on Dec. 4, for the establishment in the Interior Department of a Bureau of Health, to be under the direction of a Commissioner, who shall receive a salary of \$5,000 per annum. It also provides for the appointment by the President of a Health Commission, to be composed of twenty members, who shall be divided into six sections, as follows: Five for the yellow-fever section and three each for the cholera, typhoid fever, scarlet fever, small-pox, and diphtheria sections. Each member of the commission shall receive an annual salary of \$1,200, and it shall be his duty to investigate the cause, origin, and best mode of prevention of the diseases mentioned. Five members of the commission shall be organized into a quarantine commission, whose duty it shall be to examine into and report upon the efficacy of the quarantines at the various seaports of the United States. Upon the report of the commission to the Health Commissioner that the quarantine service at any port is inefficient the Commissioner is commanded to direct the Collector of Customs at the port to refuse entry to any vessels, goods, or persons coming from any infected place unless the vessel shall have undergone quarantine at some National quarantine station. The Health Commissioner is directed, whenever called on by the Governor of a State, to make rules and regulations and take measures for the suppression of any infectious disease. It is made the duty of Consular officers to make weekly reports to the Health Commissioner in regard to the sanitary condition of foreign ports. It is made unlawful for any person to obstruct commerce between the States or with any foreign country except in accordance with the rules prescribed by the Health Commissioner. An appropriation of \$75,000 is made for the expenses of the bureau annually, and an appropriation of \$500,000 is made to be drawn upon whenever necessary for the suppression of any contagious or infectious diseases.

THE ST CHARLES CO., MO., MEDICAL SOCIETY held one of the most interesting meetings, on November 20, in the history of the organization. Every section of the county was represented. In the afternoon the aged Dr. John A. Talley, of Wenzville, the retiring President of the Society, delivered his annual address. He condemned the theory of permitting nature to take its course in many cases, and said doctors did not disagree as often as popular opinion gave them credit for. Dr. Brûere read a paper on "Measles and its Complications." Dr. H. H. Vinke read a paper on "Cerebral Tumors and Abscesses." Discussions and the presentations of individual cases followed. After adjournment a visit was paid to the County Asylum, and the institution, together with the new insane department, was inspected. The next meeting will be held in St. Charles on the first Tuesday in February.

SANITARY CONDITION OF PENNSYLVANIA COAL MINES.

—A correspondent of the *Chicago Herald* says: One cannot but be struck with the poor condition of these mines, both as to ventilation and roof supports. The first is insufficient, and the last is criminally absent in so many cases that death from a "falling roof" has become alarmingly common. Both ventilation and roof support cost the mine-owners considerable, and, upon the principle that pervades all their mines, expenses are kept at the lowest notch, in order that the profits may reach the highest. As a consequence the mines are little more than half ventilated, and less than half supported by the necessary pillars to prevent the slate roof from falling upon the unfortunate workmen. Hence it is that the miners' hospital here is nearly always crowded, and the Potter's Field is every day extending its borders.

CONVICTION OF AN ILLEGAL PRACTITIONER.—In New York last week Francisca Ritch was sentenced by Recorder Smyth, for the unlawful practice of medicine, to 100 days' imprisonment in the penitentiary and the payment of a fine of \$100. The delinquent has had a large practice among women for many years, and this is her second conviction. Were it not for the pernicious influence of such a sentence, it would be ridiculous, but considering the amount of evil a malpractitioner causes, there can be no excuse for administering such a light sentence. Ten years in the penitentiary should be the lightest punishment for such an offense.—*America*.

NOTICE.—Those parties who answered the advertisement of Dr. E. A. Waggener, Carrollton, Mo., which appeared in *THE JOURNAL*, of Nov. 24, will please repeat their answers to him, as the whole of their letters were destroyed by accident, thus leaving him without their addresses.

A CAUSE OF LUNACY.—Mr. Baron Huddleston's latest *obiter dictum* is not bad. "Such was the intricacy of the lunacy laws," said his lordship, "that they had a tendency to reduce persons who gave an abstruse study to them into persons for whose benefit they were intended."

NEW HOSPITAL AT TACOMA.—Plans for the new hospital are nearly completed, and excavating for the foundation will commence in a few days. The building will be a handsome one, and will cost \$15,000.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from November 21, 1888, to November 30, 1888.

Major Ely McClellan, Surgeon, having reported to the Division commander, on the 23d inst., as required in par. 15, S. O. 261, c. s., A. G. O., is assigned to duty as attending surgeon at these headquarters, and as examiner of recruits at Chicago, Ill., from that date. Hdqrs. Div. of the Missouri, Chicago, Ill., November 24, 1888.

Major Henry M. Cronkhite, Surgeon, is granted leave of absence for two months, by direction of the Secretary of War, to take effect upon his being relieved from court-martial duty at Little Rock Bks., Ark. Par. 7, S. O. 276, A. G. O., Washington, November 26, 1888.

Capt. Edward B. Moseley, Asst. Surgeon, leave of absence granted in S. O. 67, November 11, 1888, Div. of the Pacific, is extended three months, by direction of the Secretary of War. Par. 13, S. O. 275, A. G. O., November 24, 1888.

Capt. Robert B. Benham, Asst. Surgeon U. S. A., Ft. Laramie, Wyo., is hereby granted leave of absence for one month. Par. 1, S. O. 111, Hdqrs. Dept. of the Platte, November 24, 1888.

Capt. John Van R. Hoff, Asst. Surgeon, leave of absence granted in S. O. 134, November 1, 1888, Dept. of the Missouri, is extended one month, by direction of the

Secretary of War. Par. 3, S. O. 274, A. G. O., Washington, November 23, 1888.

Capt. William F. Carter, Asst. Surgeon U. S. Army, is granted leave of absence for one month. Par. 4, S. O. 116, Hdqrs. Dept. of Texas, San Antonio, November 12, 1888.

First Lieut. Paul Clendenin, Asst. Surgeon U. S. Army, is granted leave of absence for one month, to take effect December 4, 1888. Par. 3, S. O. 116, Hdqrs. Dept. of Texas, San Antonio, November 12, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 1, 1888.

Surgeon J. H. Gaines, detached from the "Dolphin" and ordered home.

P. A. Surgeon Frank Henderson, detached from the "Pensacola" and to the "Dolphin."

Surgeon Wm. H. Jones, detached from the "Richmond" and to the "Pensacola."

P. A. Surgeon A. C. H. Russell, detached from the Naval Academy and to the "Wabash."

P. A. Surgeon N. H. Drake, detached from the "St. Mary's" and to the Coast Survey.

P. A. Surgeon H. W. Whitaker, ordered to the nautical school ship "St. Mary's."

P. A. Surgeon D. O. Lewis, detached from the Coast Survey and to the Naval Academy.

Asst. Surgeon A. R. Wentworth, ordered for examination preliminary to promotion.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Five Weeks Ending November 24, 1888.

Surgeon Walter Wyman, from New York, N. Y., to Washington, D. C. November 16, 1888.

Surgeon W. H. Long, from Detroit, Mich., to Cincinnati, O. November 16, 1888.

Surgeon C. S. D. Fessenden, from Norfolk, Va., to Louisville, Ky. November 16, 1888.

Surgeon Geo. Purviance, from Cincinnati, O., to Baltimore, Md. November 16, 1888.

Surgeon H. W. Austin, from Chicago, Ill., to Milwaukee, Wis. November 17, 1888.

Surgeon John Godfrey, from Louisville, Ky., to Milwaukee, Wis. November 14, 1888.

Surgeon John Godfrey, from Louisville, Ky., to New York, N. Y. November 16, 1888.

P. A. Surgeon F. W. Mead, from Baltimore, Md., to Norfolk, Va. November 16, 1888.

P. A. Surgeon John Guitéras, from Camp Perry, Fla., to Charleston, S. C. November 15, 1888.

P. A. Surgeon S. C. Devan, from Savannah, Ga., to Washington, D. C. November 15, 1888.

P. A. Surgeon F. M. Urquhart, from Live Oak, Fla., to Dupont, Ga. November 3, 1888.

P. A. Surgeon S. D. Brooks, from Wilmington, N. C., to Savannah, Ga. November 15, 1888.

Asst. Surgeon J. B. Stoner, from Charleston, S. C., to Wilmington, N. C. November 15, 1888.

Surgeon P. H. Bailhache, granted leave of absence for twenty days. November 24, 1888.

Surgeon W. H. Long, granted leave of absence for sixteen days. November 21, 1888.

Asst. Surgeon W. P. McIntosh, granted leave of absence for thirty days. October 24, 1888.

Asst. Surgeon G. M. Magruder, granted leave of absence for thirty days. November 23, 1888.

Asst. Surgeon J. O. Cobb, granted leave of absence for twenty days. November 20, 1888.

Asst. Surgeon H. D. Geddings, granted leave of absence for thirty days. November 1, 1888.

Surgeons Walter Wyman, H. W. Austin, John Godfrey, representatives at meeting of American Public Health Association.

P. A. Surgeon W. P. McIntosh, promoted and appointed P. A. Surgeon November 21, 1888.

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ORIGINAL ARTICLES.

ETIOLOGY OF THE IRREGULARITIES OF THE TEETH AND JAWS.

ARREST OF DEVELOPMENT OF THE SUPERIOR MAXILLA.

Read in the Session on Dental and Oral Surgery, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY E. S. TALBOT, M.D., D.D.S.,
OF CHICAGO, ILL.

The subject of the etiology of irregularities of the teeth is so comprehensive and so replete with points of interest, that it is obviously impossible for one to enter into minutiae within the limits of a single paper. I have therefore deemed it best to prepare a series of papers, in which an attempt will be made to present in an intelligible manner the conclusions formed during an extensive experience in the examination and study of the mouths of strong and well constituted persons, of the mouths of the insane, idiotic, deaf and dumb, and blind, and of models of various deformities of the jaws and teeth. In the present paper—the first of the series—attention will be given to such irregularities as are developed coincidently with the growth of the skeleton; these being, as is well known, chiefly connected with the superior maxilla.

Irregularities of the teeth may be classed as, first: those developed with the formation of the osseous system, and due to constitutional causes; second: those produced by local causes. Irregularities which are inherited, or appear *pari passu* with the development of the osseous system, always take definite shapes and are either the result of arrested development or of inharmonious growth of the maxillary bones. Where arrested development causes deformities they assume the forms known as the saddle- and V-shaped arches, or deformities of a similar character. Where the deformities are due to local influences they may assume any shape or position, the irregularities appearing at or soon after the development of the permanent teeth. English and American authors have spoken of irregularities as congenital, or being of a congenital origin. We can readily understand that the deformity of a single tooth may be congenital, but cannot agree in the classification of an irregularity of several teeth upon

either or both jaws among congenital deformities. Congenital, according to Webster and Quain (whose definitions are generally accepted by medical men), signifies "pertaining to or existing at birth." For instance, cleft palate, hare-lip and spina bifida are congenital deformities, because they exist as entities at birth. The first teeth have not taken positions at birth, and as the permanent teeth do not appear for six years, nor assume any degree of deformity for some years after eruption, general irregularities of the permanent teeth could hardly come under Quain's definition of congenital.

In discussing the subject of irregularities of the teeth it is necessary to commence at the formation of the bones of the skeleton, taking up the different deformities in their natural order, and finishing with the simple irregularities caused by local disturbances. As already indicated, attention will be directed in the present paper chiefly to the subject of those constitutional and hereditary conditions which affect the form of the maxillary bones. The maxillary bones include that part of the upper and lower jaw to which are attached the muscles, and not the alveolar processes, which are for the purpose of retaining the crowns of the teeth while they are forming, and for the retention and support of the teeth after eruption. Anatomists speak of the two portions as one bone, but the growth and functions of the two parts differ so widely that it seems necessary to the orthodontologist to consider them as separate and distinct structures. The lateral halves of the human frame do not always correspond in weight and size. This is true of both external and internal organs. This difference in the contour of both sides of the cranium may be seen in almost every head measure taken by the hatter. The feet, hands and limbs will show the same variation in the lateral halves. We should, therefore, be prepared to find not only differences in the upper and lower jaws, but changes in the lateral halves of each bone. This can be shown by taking full and accurate impressions of both jaws and mounting them upon wire articulators. By comparing first the jaws and then the lateral halves we may readily see how much variation exists in the jaw and teeth. These deformities are often so prominent that mechanical interference is necessary to

improve the appearance and the use of the teeth.

We are indebted to Mr. Langdon Down for first calling the attention of the profession to the V-shaped, saddle-shaped, and high arches in connection with the condition of idiocy. Later on, Dr. W. W. Ireland contributed largely towards our knowledge of and interest in these deformities. Both of the gentlemen named are at the head of large English institutions for the feeble-minded, and are devoting their lives to the care and training of these unfortunates. The numerous able papers pertaining to this subject which they have published, bear testimony to their experience and ability in all phases of idiocy. The most remarkable feature of their conclusions, as far as I am able to comprehend them, is their apparent recognition of the frequent existence of the three principal forms of maxillary deformity, and their failure to recognize any other forms of osseous asymmetry and irregularity in the skeletons of idiots. Such a preponderance of maxillary deformities as compared with other osseous tissues in the same class of subjects, is incomprehensible to me, and I find upon investigation that several prominent writers entertain quite different views. Drs. Kingsley, Stelwagen and White claim that the saddle- and V-shaped jaws and high arches are by no means characteristic deformities of idiots, and that they occur with no greater frequency than in other classes of patients. These authors also fail to note any especial tendency to irregularity and asymmetry of development on the part of the general osseous tissues of idiots.

In extensive personal examinations through various institutions for idiots, deaf and dumb, and blind, the conditions which have been observed may be classified as, first: those which are developed with the growth of the individual and may be properly called constitutional; and second: those produced by local influences. I found not only the three principal deformities of the jaws, but other irregularities, to be quite common. Among them were cases of large jaws, protrusion of the upper and lower jaws, high arch, V- and partially V-shaped arches, saddle-shaped arches, small teeth, and arrested development of the jaw bones, especially the superior maxilla. While making these examinations I observed in many of the individuals examined deformities and arrest of development with asymmetry of different members of the body. From these examinations I believe myself warranted in the assertion, that a much larger percentage of deformities of the teeth and jaws exists among a given number of imbeciles, deaf and dumb, and blind, than in the same number of normal individuals; the various conditions being the result either of arrested development, inharmonious development, or excessive growth. When we consider what special conditions constitute the entity termed idiocy, such occurrences are not at all surprising, idiocy being a general

condition. Dr. Shuttleworth has aptly described "idiocy as a vice of the entire organism, an affection not only of the nervous system, but of the functions generally of organic life. Oftentimes the whole bodily conformation bears the impress of idiocy, and not only the lineaments of the face, which by its intelligence should reflect the Divine image, but also the form of the limbs, and especially of that masterpiece of mechanism, the human hand, are sadly marred." By studying the causes and effects of idiocy we may be able to find the relations between it and abnormalities of the maxillary bone. According to one of the best authorities (Dr. W. W. Ireland) "idiocy is mental deficiency or extreme stupidity, depending upon malnutrition or disease of the nerve centres, occurring either before birth, or before the evolution of the mental faculties in childhood." From this definition we see that arrested or imperfect development of nervous tissue may take place either *in utero* or soon after birth, before the organs and tissues are developed perfectly. Such perversions of development do not confine themselves to nerve tissue alone, but may occur in any or all the tissues of the body, having apparently an especial predilection for the osseous system.

It is obvious that any condition of malnutrition, particularly if existing during the period of embryonal and infantile growth and development, which is sufficiently marked to cause perversion of growth in the complex nervous centres, must necessarily affect the tissues in general. Nervous tissues have relatively greater vitality than the other tissues of the body, and every physician knows that the brain and spinal cord will often functionate after the other structures of the body have been seriously impaired by disease. Nowhere in the range of medicine is the old adage of *mens sana in corpore sano* more aptly illustrated than in the general make-up of the idiot. He is an imperfect creation and, as far as my observations go, often thrown together in a manner quite suggestive of the absence of design.

Consanguinity in its Relation to Deformities in General.—Consanguineous marriages not infrequently result in mental aberrations in the progeny. Dr. Howe states that in 17 families the heads of which were related by blood and intermarried, the result was fearful. Most of the parents were intemperate or scrofulous, and some combined both evils, so that it must be admitted that there were other causes to increase the probability of infirm offspring, besides consanguinity. There were born in these families 95 children, of whom 44 were idiots, 12 were scrofulous and puny, one was deaf and one was a dwarf. In some of the families all the children were either idiotic or very scrofulous and puny. In one family of 8 children 5 were idiotic. The commissioners of idiocy in Connecticut found in 160 cases of idiocy 20 which apparently resulted from consanguineous

marriages. Of these 12 were children of first cousins, 3 of second cousins, 1 of third and 4 of distant relations. Dr. Langdon Down found that out of 753 male idiots 33 were the offspring of first cousins, 3 cases of second cousins, and 4 of third cousins; in all 40 cases out of 753, or rather more than 5 per cent. Of the 295 females, 13 were the children of first cousins, 3 of second cousins, and 4 of third cousins; in all 20 among 295, or little less than 7 per cent. His researches show that in England at least every fourteenth idiot is the child of cousins. The majority of cases of idiocy appear at birth, and many such may be traced to habits or tendencies of ancestors. Often it is difficult to determine in what generation the germs of the disease were planted. Ludwig Dahl, of Norway, in his work on insanity, shows by means of a genealogical tree, how an apparently healthy couple may have children, grandchildren, and great-grandchildren affected with idiocy and insanity.

In reviewing the field of possible causes of idiocy, I am greatly impressed by the apparent influence of consanguineous marriages. Dr. S. M. Bemis, of Louisville, Ky., has found through his examination of statistics supplied by a number of physicians, that among 2,778 children, the fruits of intermarriage of first cousins, 793 were normal; 117 deaf and dumb; 63 blind; 231 idiotic; 24 insane; 44 epileptic; 189 scrofulous; 53 deformed; 637 died early.

Scrofula.—The most common lesion accompanying idiocy is some form of scrofula, such as strumous ulcers, skin eruptions, abscesses, enlarged and suppurating glands, diseases of the eye and ear, these diseases being quite general attendants of idiocy. A very large proportion of persons affected with idiocy die of consumption of the lungs, which is of all diseases most often associated with what may be termed a defective make-up. Dr. Ireland says that at least two-thirds of the idiot class are of scrofulous constitutions. "Is arrested development of brain tissue the result of scrofula, or do scrofula and idiocy proceed from a common cause?" is a question often propounded to physicians. In the light of recent observations, I am personally of the opinion that when the two conditions are associated, they are dependent upon a common cause—never, in my opinion, do they bear the relation to each other of cause and effect. The teeth, as we well know, are affected in their development and growth by scrofula and other constitutional defects. The other organs and tissues of the body may not outwardly show such defects as plainly as do the teeth, but the result of any constitutional disease will nevertheless be apt to exist in a form quite as markedly pathological.

Drunkenness in Parents.—There is a wide variance of opinion among medical men, regarding the probable influence of intemperance of parents

in the production of idiocy and allied conditions in their offspring. Dr. Langdon Down is emphatic in his opinion that drunkenness at the time of conception is liable to produce serious results upon the brain of the child. Ludwig Dahl believes that the abuse of brandy in both father and mother is one cause of the large number of idiots in Norway. On the other hand Dr. C. T. Wilber, of the Illinois State Asylum for idiots, states that in 365 idiotic patients 8 only claim drunken parents. Dr. Graham, Superintendent at Earlswood, Eng., also states that he found among 800 inmates of that institution, but 6 cases of idiocy which could be attributed to intemperance of parents. Whether or not drunkenness is responsible for idiocy we cannot decide, but we know positively that intemperate habits are transmitted from generation to generation, each series of progeny in the line of descent showing a lower grade of intellect. As an illustration of the probable influence of intemperance, I cannot do better than quote Dr. Shuttleworth. Considering the intimate and prolonged dependence of the child upon the mother during gestation and nursing, one would suppose *a priori* that maternal rather than paternal drunkenness would count most in production of idiocy.

In the cases which I have tabulated, drunken fathers preponderate in a majority of 13 to 4. Possibly the mental anxiety entailed upon the wife by a drunken husband during the impressionable period of pregnancy may in part explain the discrepancy. Whatever the direct effect of drink upon the foetus *in utero*, there is little doubt that such nursing as a child is likely to obtain from a drunken mother will intensify any predisposition to mental defect. The baneful practice of giving infants alcoholic drinks seems to prevail to a great extent in Sweden and Norway. Such practice may in part account for the extensive prevalence of idiocy and juvenile insanity in Scandinavia as described by Ludwig Dahl.

Prenatal Influence and Intra-uterine Education.

—It is unquestionably a fact that a fright to the mother during pregnancy is occasionally a cause of idiocy in children. Women instinctively shrink from anything which would produce a shock or special mental impression during the period of gestation, fearing for both the mental and physical welfare of the child. Strange to say, the same maternal instinct prevails with the brute creation. Dr. G. H. Fisher has written a complete history of the "Literature, Classification and Description of Human and Brute Monstrosities," including the so-called Parasitic Monster known as "Foetus in Foetu," and the various supernumerary formations of parts and organs which are familiar to medical men.¹

¹ "Many interesting cases are given by this author, including deformities of the upper and lower extremities and internal organs, He states positively that the lower animals may become insane.

The result of the various lesions and pre-natal impressions already mentioned is not only mental in character, but we invariably find arrest of development of brain substance in idiots, imbeciles and feeble-minded children, the different terms indicating the degree of mental development. It is to be observed that a majority of these cases are affected by impressions made upon the foetus *in utero* through the influence of the parents. A few cases, however, are mentioned as resulting from diseases or injuries occurring soon after birth, or in childhood. If arrest of development of brain tissue occurs *in utero*, or in early childhood, other organs or tissues of the body are likely to be similarly affected. The brain of the idiot is lighter and has fewer convolutions than the normal brain, and also differs in that the convolutions of the idiot's brain correspond on both sides, like the monkey's, while they vary in the normal human brain. The anterior lobes of the cerebral hemispheres are imperfectly developed, and where the head is unusually small the antero-posterior diameter of the cerebral hemispheres is shortened. Irregularity of the two halves of the brain is quite commonly observed.

The cerebellum, pons Varolii, and medulla oblongata, are smaller than normal with almost perfect asymmetry. Not infrequently portions of the brain are altogether absent. Absence of the entire cerebellum and a rudimentary condition of one or both obliary bodies, peduncles, optichalami and corpora striata having been noticed. Griesinger, in his work on mental diseases, mentions a number of interesting cases, one of which we will cite. The brain examined was that of a girl 17 years of age, who presented the highest type of idiocy, in conjunction with a generally defective physique. The conditions present were very interesting and may be briefly described as follows: The middle free portion of the corpus collosum was entirely absent, as were also apparently the septum and the middle portion of the fornix. The anterior and white commissures of the gyrus fornicatus were decidedly rudimentary. The convolutions presented an abnormal grouping and the Island of Reil was greatly atrophied. Some of the convolutions were entirely absent. The lobes of the cerebellum were asymmetrical.

Dr. A. Wilmarth, of the Penn. Institute of Feeble-Minded Children, says: "In six brains the Island of Reil was exposed through the defec-

tive development of the third frontal convolution; in four cases on two side, in two on one side only. In 18 brains 6 were found where the cerebrum failed to cover the cerebellum from one-eighth to five-eighths of an inch."

I could quote indefinitely from eminent authorities at home and abroad to show that not only are the different structures of the brain of the average idiot atrophied, and often entirely wanting, but that diminution of weight is the rule. Enough cases have been cited to give a general idea of the defects in anatomical structure of the brain of idiots.

Having determined the constant relation of defective cerebral development to idiocy, it remains to be proven whether the defective condition is a special one affecting the brain only, or is an integral part of the generally defective, or mal-development, or at least of a general tendency toward such perversions of growth. When we take into consideration the fact that the foetus is developed in two lateral halves, which may or may not develop harmoniously and may or may not fuse together properly, it becomes logical to presume that any influence which tends to produce inharmony and asymmetry of growth in one part of the body, *e. g.*, the brain, must necessarily tend to produce the same conditions in other portions of the foetal halves, providing such influence is not a purely local one. The causes of idiocy not being local, but general, the inference is obvious. It is astonishing to me that the superintendents of institutions for feeble-minded have made so little note of the asymmetrical relations of the two lateral halves of the body, in the cases under their care. Personally, I am of the opinion that harmony of members does not generally prevail in the anatomy of the idiot. In examining the inmates of various institutions I was struck with the numerous examples of arrested development, hypertrophy and asymmetry of upper and lower extremities. These abnormal conditions accord with the types of cerebral mal-development already cited. The following cases from other sources confirm the accuracy of these observations:

"Boy of 5½ years. Admitted into the Liverpool Infirmary for Children October 15th, 1878. Weight 10½ lbs.; height 29 inches; intelligence very limited; can utter no articulate sound; eyes large and well-developed, yet he is undoubtedly blind. Sense of hearing apparently normal. He has all his first teeth, but makes no attempt to masticate his food. Forehead does not recede, head is proportionate to size of body; circumference over the occipital protuberance and eyebrows 16 inches. Cannot sit up, the back below the neck being rigid and arched in the lumbar region from tonic contraction of the spinal muscles, pro-

and that heredity and pre-natal shocks have much to do in producing these conditions.

"Innumerable cases of pre-natal shocks producing idiocy where the parents were both apparently healthy are on record. In one case the news of the loss of the husband at sea had the effect of impairing the intellect of the unborn child; again, the same result occurred in another case as a result of fright occasioned by a team of horses running away with the mother when well along *in utero* gestation. Baron Percy, a French military surgeon, observed that out of 92 children whose mothers had been exposed to the terrors of a tremendous cannonade at the siege of Laudan, in 1793, 16 died at the instant of birth; 33 languished from 8 to 10 months and then died before the age of 5 years; and 2 came into the world with numerous fractures of the bones of the limbs."—Trans. N. Y. State Med. Soc. 1865 to '68.

NOTE.—Rawdon, H. G. "Case of dwarfed growth associated with idiocy and congenital tonic contractions of the muscles of the spine and limbs."—British Medical Journal, London, 1879, 1, 356.

ducing a condition resembling opisthotonos. The upper extremities are in a state of rigidity, the limbs have a wasted and shriveled appearance, but the face is not thin. The child has evidently been well cared for. There is no tendency to rickets. Facial and cervical muscles are unaffected.

"The child was affected as described from his birth; was a twin, but only one-third the size of his fellow twin. He cut his teeth at the usual period. Has had no convulsion or disease of any kind since his birth. He was suckled. Father and mother are healthy and live in the country and their children before and after the birth of this one were healthy and well developed.

"I have thought this case might be of interest to the profession. It certainly seems a curious fact that I should not have been able to discover any report or notice of a case at all similar to this one, and yet I cannot doubt that such cases have from time to time occurred. The case may, perhaps, be regarded as one of intra-uterine blight, but why, or when it took place we can have no means of judging."

(2) Mazier (Edmund).

"On arrest of development in idiocy."

Paris Thesis, No. 452, Paris, 1879.

General conclusions of author:

1. Idiocy consists in an arrest of cerebral development primarily of the nerve centres.

2. This arrest of development may appear at any time of life, uterine or extra-uterine.

3. The organs whose development is incomplete at the time when the arrest of cerebral development occurs are also affected in their development.

4. The anomalies thus resulting consists in the persistence of one of the transitory or rudimentary forms through which the body must pass before reaching its complete development.

5. The arrest of development of an organ interferes with its functions, and from this results malformations and numerous organic deviations which constitute a secondary series of anomalies only mediately allied to idiocy.

Obs. 1.—E. P., æt. 16 years, natural child, twin. Had ocular hæmorrhage soon after birth; convulsions till the age of 7; percutient cephalalgia; began to walk when 2 years old; could speak a little earlier.

Cranium: Antero-posterior diameter 0.18 m, transverse diameter 0.15.

Face: Total length 0.155, occipito mental diam. 0.278. Mouth open. Tongue always protruded between the teeth. Palatine arch is deep and oval.

Genital organs are rudimentary.

Mental condition: Voracious glutton; is susceptible of education, having learned to read; cannot write or count. Tries to be useful.

Obs. 2.—P. S., æt. 18, idiot. Mother hysterical,

grandfather died of apoplexy, grandmother was a drunkard and died of phthisis. Forehead narrow, temples hollowed. Microcephalic. Began to speak and walk very late. Is very clumsy; has had convulsions; is frequently angered. Epileptic vertigo. Chronic ophthalmia. Eyes quite separated. Dentition defective; superior dental arch is triangular. Teeth are disposed in three rows and are prominent and projecting. Ears small. Nose greatly developed and arched. Forehead receding and depressed.

Cranium: Antero-post., diam. 0.170, transverse diam. 0.137.

Face: Total length 0.127. Extl. orbital line 0.107. Defective formation of the feet and hands, which are flat; thumbs are thick, short and spatula-like.

Penis well developed; pubis hairy; no testicles in scrotum, but can be felt in the inguinal canal on each side.

Mental condition: Masturbator. Does not understand anything. Impulsive, violent, cynical.

Obs. 3.—P. P., æt. 17. Idiot in the 2d degree. Congenital club-foot. At the age of 3 years had meningitis, with convulsions for 15 days, and consequent permanent strabismus. Began to walk at 4, and to speak, very late and with great difficulty. Has had variola, typhoid fever, pleurisy and scrofula.

Head: Well formed, hearing good.

Face: Only two incisors in upper maxillary; no canines, three molars on each side. Inferior maxillary is narrowed at a level with the premolars (permanent), two canines, gums fungous, spongy and bleeding.

Hands large and purple. Atrophy of testicles. Penis normal.

Obs. 4.—G. D., æt. 21 years. Microcephalic, can speak and read. Cranium rudimentary.

Ant. post. diam. 0.147, transverse diam. 0.118. Face: total length 0.122. Occipito mental 0.202, external orbital line 0.097; opening of superior dental arch on a level with the first premolar, 0.027.

Ears well developed.

The superior dental arch is contracted at a level with the molars, and thence divergent, teeth carious. Finger-nails curved like claws. Thumb of right hand is upon the same plane as the other fingers, and its dorsal face is turned backwards. Feet long, flat, narrow and misshapen.

Mental condition: Intellectual faculties nil. Tries to attract attention. Has had instincts.

Obs. 5.—L. L., æt. 13. Imbecile. Scrofulous constitution. Double convergent; strabismus very marked. Ears largely developed. Palatine arch high, regularly oval and deep.

Superior maxilla large and thick, and its teeth carious. No canines. Tonsils large, with atrophy of uvula. Genital organs atrophied, single tes-

ticle in scrotum. Belly large and pendulous. Is able to read and write some. Has had instincts and is easily angered.

Obs. 6.—G. S. æt. 16, imbecile, deaf, internal strabismus.

Head normal. Face long, 0.152, width 1.075, occipito mental diam. 0.233; dental arch at a level with the first molar, 0.022.

Ears long. Mouth always open.

Superior dental arch narrowed, palatine arch oval and deep, tonsils enormous, teeth carious and irregularly disposed. Superior prognathism. Lips thick, the inferior is hanging. Intellect susceptible of development. Has had instincts.

Obs. 7.—L. O., æt. 16. Complete idiot, deaf and dumb. Head quite large. Eyes most always closed; strabismus. *Convulsions four days* after birth, daily attacks till the age of 18 months. Left hemiplegia and right hemichorea. Could walk at 2½ years. Has a deaf sister who has a hare lip. Ptyalism: face asymmetric, more developed on right side. Cranium: Ant. post. diam. 0.165, transverse 0.135. Intellectual faculties nil.

Obs. 8.—F. N., æt. 15. Scrofulous constitution. Microcephalic. Cranium: Post. diam. 0.145, transverse diam. 0.127. Face: Length 0.126, occipito mental diam. 0.222, external orbital line 0.101.

Dental arch on a level with first premolar.

Chronic blepharitis.

Mental condition: can speak, hear, and reads a little, but cannot write nor count. Incapable of the least mental effort.

Obs. 9.—A. B., æt. 10. Superior and inferior prognathism, still has his first teeth which are quite regular. Intellectual faculties nil.

N. B. The measurements are in the metric system.

There are seven other cases almost precisely similar to the above, given in the same work, but it is unnecessary to quote them.

A paper by Dr. G. E. Shuttleworth, England, presented before the International Health Exhibition, London, Aug. 2, 1884, upon "The Health and Physical Development of Idiots as compared with Mentally Sound Children of the same Age," he says, "Many idiots are undoubtedly small at birth, not a few have been brought into the world prematurely, but in nearly all, imperfections of functions interfere with due nutrition and development, as the following table will demonstrate:

Report of Cases of Arrested Development and Excessive Growth of all the Tissues, in Connection with Idiocy, Imbecile and Feeble-minded Children.

Table shows the Relative Mean Stature and Weight of the general population and of 1,209 Idiots and Imbeciles in Earlswood, Royal Albert, and Larbert Asylums.

Age last Birthday.	HEIGHT.				WEIGHT.			
	General Population.		Idiots and Imbeciles.		General Population.		Idiots and Imbeciles.	
	Inches.		Inches.		Pounds.		Pounds.	
	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.
5	41.0	40.55	40.0	39.5	...	39.2	39.0	37.5
6	43.0	42.88	42.25	41.25	...	41.7	43.0	41.0
7	45.0	44.45	44.0	43.25	...	47.5	46.5	45.0
8	47.0	46.60	45.75	45.25	55.0	52.1	50.5	49.0
9	49.0	48.73	47.5	47.5	60.0	55.5	55.5	53.0
10	51.0	51.05	49.0	49.0	65.0	62.9	59.0	59.0
11	53.0	53.10	51.0	51.0	70.0	68.1	64.5	66.0
12	55.0	55.66	52.5	53.0	77.5	76.4	70.5	72.0
13	57.5	57.77	54.75	55.0	85.0	87.2	77.0	80.0
14	60.0	59.80	56.5	56.5	92.5	96.7	85.5	88.0
15	62.0	60.93	59.25	58.0	102.5	106.3	94.5	95.0
16	64.0	61.75	60.75	59.0	117.5	113.1	103.0	102.0
17	65.5	62.52	62.5	59.25	135.0	115.5	110.0	106.0
18	66.5	62.44	63.25	...	142.5	121.1	116.0	108.0
19	67.0	62.75	63.25	...	143.7	123.8	120.5	108.5
20	67.25	62.98	64.0	59.5	145.0	123.4	121.5	108.5
21	67.5	63.03	64.25	...	146.2	121.8	122.0	...
22	...	62.87	64.5	...	147.5	123.4	122.5	...
23	...	63.01	...	...	148.7	124.1	...	...
24	...	62.70	...	...	150.0	120.8	...	...
25-30	67.75	62.02	64.75	59.75	151.2	120.0	123.0	109.0
30-40	...	...	...	...	152.5	120.8	...	...
40-50	...	61.15	...	...	155.0	118.6	...	...
50-60	68.0	...	...	...	157.5	104.0	...	...

It will be observed that idiots are shorter than the general population: at 5 years, by 1 inch; at 10 years, by 2 inches; at 15, by 3 inches; at 20, by 3 inches. While, as regards weight, male idiots are lighter than the general population: at 8 years, by 4½ pounds; at 10 years, by 6 pounds; at 15 years, by 8 pounds; at 20 years, by 23½ pounds, the disparity being greater in the male than in the female sex. It appears that the relative rate of growth of the two sexes of idiot children follows the same rule as that of normal children, and is subject to the same variations at the age of puberty, for two years preceding which the growth of girls is in excess of that of boys.

ABNORMALLY SHAPED HEADS.

If the mental capacity could in all instances be measured by the size and form of the head, many among the idiotic would rank high. The shape and size of the skull is indicative of the mind only in a general way, the feeble minded being about equally divided between abnormally large and small heads. The measurement of the ordinary well-balanced head ranges from 20 to 36 inches in circumference, and that of the idiotic head from 12 to 26 inches. Opinions vary in regard to the average size of the microcephalic idiots, some claiming that all heads of 16 inches and under come under this class, and others that 13 inches in circumference is the average microcephalic head, while upon the other hand, all heads which measure more than 36 inches in circumference would be considered either macrocephalic or hydrocephalic.

The extreme cases are comparatively few in the institutions. Out of 600 inmates of the

Pennsylvania Institution, at Elwyn, which I examined with the assistance of the superintendent, Dr. I. N. Kerlin, and Dr. Wilmarth, I found but 28 microcephalic, 24 macrocephalic and 3 hydrocephalic cases. We shall find these extreme cases exceedingly interesting in the study of the etiology of irregularities of the teeth, and shall give special attention to their relations later. There is a certain size of the head, below which an individual must be an idiot. Voisin says, "that the proper exercise of the intellectual qualities is impossible with a head of from 11 to 13 inches in circumference, and a measurement of 8 to 9 inches from the root of the nose to the posterior border of the occipital bone." Irregularities in the external surface of the cranium predominate in every idiotic head, and in such variety that no two heads are found alike. These conditions show a want of development of the brain. The brain substance being the first to obtain its growth, the cranial bones are moulded about it, and are in a manner supported by it until the sutures have united. If the brain be slow in developing and shaping, ossification of the sutures is retarded; should the brain or parts of it be retarded in growth, the cranium would be either microcephalic or asymmetrical in its development. Again, inharmonious closure of sutures may also produce unilateral contractions of the bones of the head. I do not wish to convey the idea, however, that asymmetry in the cranium is always the result of malformation of brain tissue, as by far the majority of cases result from arrested development or interruption in the growth of bone tissue. *Per contra*, I am well aware that perfectly symmetrical heads are rare in even normal individuals. The diagrams in possession of our hatters tell a woful tale, not at all flattering to our racial self-conceit! This retarded growth may result from constitutional disturbances acting unfavorably upon general nutrition, or from inflammatory conditions of the osteophytic membrane which may take place *in utero*, thus prematurely closing the sutures. There is no law governing the development of the brain and the closing of the cranial sutures. Those bones, the sutures of which close before the proper time, will be narrowed at the point of premature fusion. It is reasonable to expect, that when bones prematurely ossify at one part of the cranium, dilatation will take place directly opposite, as the brain grows in the direction of the least resistance. This explains many peculiar deformities of the head; again, if the majority of the sutures ossify prematurely, microcephalus may result. It appears reasonable, also, to infer that the shape of the basis cranii will be affected in a similar manner by too early or too late ossification. These changes are caused by improper nutrition of the bones and cartilage. A knowledge of this fact gives us a clear conception of

the relation which various general conditions bear to idiocy and imperfect development in general. The influence of such perversion of nutrition as are produced by syphilis, tuberculosis, struma and intemperance over the ossification and growth of bone is a most potent one. The shape of the base of the skull and the contour of the face depend largely upon the ossification of the sutures. When ossification of the cartilages occurs early, a shortening of the basis cranii results. Especially is this the case when premature ossification occurs in connection with the sphenoid bone. The age, when the basilar portion ossifies in a normal subject is from 15 to 20 years. Thus too early ossification naturally produces a shortening in the antero-posterior direction which cause serious deformities in the shape of the face, and an abnormal curvature at the base of the brain. The superior maxillary bones are attached to the bones of the head and face by eight articulations, and as the ossification of the sutures occurs at about the same time as the ossification of the sutures of the basis cranii, the same influences which affect the cranium must also affect the superior maxilla. These conditions may account for family features not presenting themselves until middle age. This is a strong argument in favor of postponing the operation of regulating teeth until the contour of the face has been permanently established. When there is inflammation of the membrane *in utero* (which is of common occurrence), the sutures ossify before or soon after birth, and as a result the base of the cranium will assume and remain in, an undeveloped condition, causing the face to present an abnormal shape and size, which will broaden the face, throw the cheek bones out prominently, make the nose broad, flat and sunken, and extend the space between the eyes, giving as a whole a face void of expression. When the sutures at the base of the skull ossify normally the antero-posterior diameter is longer, the base of the cranium is more angular, the features sharper, with the eyes closely set, and a face full of expression. The sphenoid bone does not attain its full size until from the 25th to the 30th year of age.

I am of opinion that when the bones at the basis cranii ossify before, or shortly after birth, the superior maxilla and septum nasi assume a decidedly unnatural form. Dr. Oakley Coles, in his work upon "Deformities of the Mouth," ascribes the different deformities of the jaw to premature ossification either of the sutures or the basis cranii, thus he says, "that the deformity known as inter-maxillary prognathism is the result of a force operating on the inter-maxillary bone, such force originating in the body of the sphenoid and being transmitted by the intervening nasal septum."

He says, also, page 95, "After carefully exam-

ining the works of various writers on the subject of microcephalic idiocy, there seems sufficient evidence to justify the belief that premature ossification of the sutures is the rule in a majority of cases of microcephalus, and we may, therefore, assume if we cannot absolutely conclude, that this influence operates powerfully in the production of the dental deformity known as the "lambdoid jaw" or V-shaped arch.

While, as has already been observed, I believe that premature ossification of the sutures and basis cranii is followed by deformities of the jaw and septum nasi, I do not think that they bear to each other the relation of cause and effect. In this I beg leave to differ with Dr. Coles. It is unnecessary to expatiate upon this subject in the present paper, as it will be the principal topic for discussion in another which I hope to present later on.

RÉSUMÉ.

1. Irregularities of the teeth cannot be justly said to be of congenital origin since they do not exist at birth.

2. Irregularities of the teeth cannot occur until they have erupted, and thus shown their relation to each other and to the jaw.

3. Irregularities of the teeth, which I have denominated constitutional, prevail to a greater extent among the idiotic, deaf and dumb, and blind, than among an equal number of strong and healthy persons.

4. It may be seen that not only is the brain matter deficient in the feeble-minded, but, as I have noted, many cases are seen which demonstrate that the osseous system is also generally defective.

5. Arrest of development is the result of malnutrition during embryonal and infantile growth influenced by consanguineous marriages, scrofula, drunkenness in parents, pre-natal influences, intra-uterine education and constitutional diseases, or of inflammation of the osteophytic membranes *in utero*.

6. Irregularities of the teeth do not exist among normal or large jaws, while among those who have abnormally small jaws, the majority have irregular teeth.

7. When premature ossification of the sutures at the basis cranii takes place, the antero-posterior diameter is shortened, producing arrested development of the superior maxilla.

8. When the bone tissue is arrested in development from malnutrition, the maxillary bones are also affected.

9. When arrested, development of the superior maxilla occurs, the face often presents a sunken appearance at the angle and root of the nose, with the nose broadened and the inferior maxilla prominent.

10. In another paper I shall attempt to prove

that the irregularities of the teeth, called constitutional, are the results of small maxilla, and that Dr. Hammond's future man will not only lack hair and teeth, but the superior maxilla will gradually decrease in size and eventually become rudimentary.

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DR. J. S. MARSHALL, Chicago: I have listened with great interest to the subject just presented by my friend, Dr. Talbot. I believe he is correct when he says the causes of irregularities are: "First, those developed with the formation of the osseous system and due to constitutional causes; and, Second, those produced by local causes;" but cannot agree with him in his objections to the use of the term *congenital*, as used by the English authors quoted, when they say, certain forms of irregularities are congenital, or of congenital origin. The author would confine the term to very narrow limits,—to conditions which are present and discernible at birth only. The inherited small superior maxillæ, which upon the eruption of the permanent teeth cause irregularities is, nevertheless, a congenital defect of conformation, though the evidence of this may not be at first apparent. I can therefore see no impropriety in this use of the term, and I think the etymology of the word will bear out the correctness of its use in this connection. Congenital causes would therefore be those which occur during generation, and may arise from hereditary predisposition, or inherited tendencies or defective conformation. Acquired causes would be those which occur after

birth, the result of disease or accident. The terms congenital and acquired, would seem to cover the subject as completely as could be desired.

The special point in the paper, however, which interested me most is that in which he claims the superior maxillæ are gradually decreasing in size and that eventually they will become rudimentary. I am not prepared to admit the correctness of these views. The thought is repulsive. What would such a condition mean? Hideous deformity. The marring of features which God created in his own image, and I cannot believe that He would afterwards so disfigure his handiwork. I am willing to admit, however, that I have seen a goodly number of such cases as the author refers to; but these were cases in which the individual had inherited the small maxillæ of one parent with the large teeth of the other, or were the result of arrested development caused by congenital or acquired idiocy.

The first named cause of this form of defective conformation I think is more commonly seen in America than elsewhere, and is due to the effects of the intermarriage of individuals from so many different races and nations, who have been brought together through immigration, under the same social system.

The Caucasian race is divided into a number of quite distinct families or national types; the English, the German, the Scandinavian, the Irish, etc., and each has a peculiar cast or type of features which indicate to which of these nations it belongs, while the size and shape of the maxillæ play a very important part in determining the type. The alveolar arch of the English forms very nearly one-half of an elipsis; in the German the arch is broader through the canine region, as is also that of the Scandinavian, and approaches more nearly a half circle, while in the Irish the curve is flattened in the incisive region and quite angular in the region of the cuspids. These types of features are all so marked as to be readily distinguished by even the casual observer. They are national peculiarities and will remain distinctive so long as miscegenation is not practiced to any great extent, for they are the natural result of centuries of intermarriage or breeding with people of the same type.

America, or more correctly speaking, the United States of America, cannot yet boast of a type of face that can be strictly called American. The features of the people are in a transition state. The mixture of blood has been so constant and so diverse, ever since the settlement of the country, that the original national peculiarities of features of the various nations represented are gradually being modified.

In Virginia, which was settled by the English and whose people have kept the original blood tolerably pure, we find a type which differs but

slightly from that of their English cousins, no more so than might be expected from the change of environment. In New England where the mixture of blood was quite diverse, there is seen an effort upon the part of Nature to establish a national type; but this is only the beginning. Two centuries is not time enough to assimilate and remodel such a heterogenous mixture of conflicting elements. The crossing of races of men changes the size, form, mental capacity and physical endurance. In the crossing of distinct races, as for instance the Anglo-Saxon with the Negro, the size, form and mental capacity of the lower order may be improved, but the physical endurance (to labor or resist disease) has been lowered. This fact was generally recognized by the slave buyers before the abolition of slavery in this country, and consequently they never bought mulattoes for hard work in the rice fields or upon sugar plantations. On the other hand, the Anglo-Saxon element is not improved by the admixture of Negro blood.

Breeders of fast horses never cross their stock with an inferior breed—cart horses, Norman, for instance, but in order to improve the speed, form and endurance, they chose the finest animals of the same stock or general type, carefully selecting those having the finest points and which complement each other. In this way the stock is gradually improved in all those characteristics most desirable. This is known as selective breeding, but if confined to too narrow limits a few generations only is required before the stock begins to degenerate. Marked illustrations of this in the human family may be found in the degeneration of some of the royal and noble families of Europe, where, for political reasons, or for the sake of entailing property, they have intermarried for several generations. The insane asylums and institutions for the feeble minded give the result.

The author also says that "the teeth retain the same size and shape that they had 3,000 years ago." This, I believe, is in a relative sense true, but I cannot believe that the superior maxillæ on the other hand are growing smaller and the teeth retaining the usual size. I think he has made the mistake of drawing conclusions from isolated cases and conditions which are only transitory, steps in the processes of Nature in establishing and perfecting a new type. As I said before, we have no national type of features in America, and it will require centuries to produce one, but when that type shall have been perfected all its parts will be in harmony; there will be no such deformed physiognomy as that pictured in the paper, but rather a higher type of Anglo-Saxon beauty.

The Anglo-Saxon is the dominant race and destined to rule the world. It is stamping its peculiarities upon every race and nation with which it comes in contact, and is no less surely impressing its mental and physical characteristics

upon those people with whom it mixes its blood. This will account for the change taking place in the features and consequently in the maxillary bones and alveolar arches, of the inhabitants of this country.

The parent of the strongest characteristics usually dominates the character of the offspring.

This is equally true of men and the lower animals, and none the less true of the races of mankind. If the same care could be exercised in the selection of individuals desiring to enter into matrimonial relations that is always insisted upon in the selective breeding of horses, the congenital or constitutional causes of irregularities of the teeth, as well as other and graver constitutional defects, would soon pass away and the maxillary bones and the teeth would be in perfect harmony. But so long as men and women are permitted to enter the matrimonial state with no thought as to their fitness for such relations or the well-being of the offspring likely to be born to them, such deformities and constitutional defects will continue to exist, but not indefinitely. Nature will, in spite of this, through her moulding and assimilating processes, harmonize all discordant elements of feature and form, and produce in time a national type of face and jaws in which deformities of this class will no longer exist.

AN INTERESTING CASE OF FIBROMA OF THE LARYNX.

Read in the Section on Otology and Laryngology, at the Thirty-Ninth Annual Meeting of the American Medical Association, May, 1888.

BY JOSEPH EICHBERG, M.D.,
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W. S., the subject of this sketch, whom I present to the Section for further examination, first came under my observation on the 23d of September, of last year, with the following history: The boy, who had always enjoyed fair health, and was well developed and nourished for his years, was taken down on the 28th of June, 1887, with a very severe attack of scarlet fever, associated with diphtheritic symptoms of the most pronounced type, followed by severe hæmorrhage from the ulcerated patches. These hæmorrhages occurring during the period of convalescence required the hypodermic use of ergotin before they were finally arrested.

The convalescence having progressed so far as to permit of the patient's travelling, he left the city on the 7th of August, in company with other members of his family, and of Dr. Judkins, by whom I was subsequently called in council, and whose care and interest in the case has not flagged since its inception. The voice then, and prior to his illness, had been somewhat hoarse, though there had been no particular embarrassment of respiration.

It was intended to pass the summer at Atlantic City. So feeble had the little patient become, that he could neither feed himself, nor walk, at the time of leaving home. Within three days of his arrival at the seashore a marked improvement was noted, but there was scarcely any audible voice.

On the 18th of August, as the result, it was thought, of undue exposure, the boy was suddenly seized with most distressing spasmodic breathing, a hoarse, barking cough, and dyspnoea; so that it was feared a fresh membranous exudation had occurred in the interior of the larynx.

The difficulty of breathing gradually increasing, assistance was telegraphed for from Philadelphia, whither the boy was removed on the 21st of August, and tracheotomy was performed, under the advice of Dr. Meigs, by Dr. Wharton. So imminent seemed the danger that no time was taken to produce anaesthesia, and the carbonic acid poisoning had reached such a stage that, in his own words, he never felt the operation.

The dyspnoea was relieved at once, but the boy's strength again gave way and it was two weeks before he could leave his bed. The first attempt to withdraw the tube was made three weeks after the operation. In less than forty-five minutes the peculiar hoarse breathing again manifested itself, requiring the reinsertion of the tube. The effort to establish laryngeal breathing by plugging the orifice of the tube with a cork likewise proved unsuccessful, and the patient was then taken to an eminent laryngologist, who found the larynx "occluded at its upper orifice by morbid growth, which he presumed to be what is known as papilloma." A piece of this mass was removed by forceps for microscopic examination. This was on the 21st of September.

The boy was brought home on the following day and the first examination showed the entrance of the larynx to be almost entirely occupied by a pinkish mass, attached by a broad base to the middle and posterior part of the left ventricular band; completely overhanging the parts below, so that there was but a small chink along the right ary-epiglottic fold, through which an entering current of air could find passage.

On the 26th of September the loop of the galvano-caustic holder was passed over the growth, and the larger portion of the mass cut off with the snare without the aid of the current. Very little resistance was encountered in drawing the loop and only a slight hæmorrhage followed. The ease of division of the growth awakened some suspicion of malignancy, which was strengthened by the microscopic examination.

The portion of the tissue removed measured $\frac{3}{8}$ inch in length, $\frac{1}{4}$ inch in width and was $\frac{1}{8}$ inch high. The microscope showed the growth to be covered with a layer of stratified pavement epithelium, consisting in some places of as many as

ten layers of cells loosely attached to the subjacent mass of the growth. "The tumor itself consists almost entirely of a young and rapidly-growing connective tissue, made up of round cells enclosed in the meshes of a finely fibrillated connective tissue.

"Distributed throughout the growth in considerable masses are glandular ducts and acini (probably from hypertrophied mucous glands). These are made up of short columnar epithelium, and their walls are infiltrated with the round-celled proliferation. The blood-vessels are not very abundant and the walls of the larger ones show some connective tissue thickening. In certain areas there are signs of breaking down, where collections of granular debris with isolated round cells and free nuclei are seen." A note was made at the time that were it not for the presence of such abundant fibrillated connective tissue there would be no hesitation in classing the growth as a round-celled sarcoma. No appearance of papillary overgrowth was anywhere manifest. The nature of the tumor was such as to lead to some fear for the outcome of the case entirely irrespective of the local obstruction occasioned by its position. The report of the fragment removed in Philadelphia, examined at the Army Medical Museum, was, in the main, identical with our own observations.

Somewhat fearful of the result, yet anxious to eradicate the growth if possible, the remaining portion of the base of the tumor was cauterized with the galvano-caustic wire on three separate occasions, and we soon had the satisfaction of seeing the continuity of normal mucous membrane restored, with no indication of a recurrence since that time.

The clearing of the larynx had not put an end to the difficulties in the management of the case. The patient had now worn his tracheal tube about seven weeks, and would not tolerate its removal, nor could he wear the cork for more than half a minute without manifesting alarming signs of dyspnoea.

In view of the possibility of other similar growths below the vocal cords, a metallic probe, suitably bent, was on two occasions (toward the end of October) passed through the tracheal wound, through the larynx and into the pharynx, until its rounded end was plainly visible. No obstruction was encountered.

Another experiment was made to free the patient from the incumbrance of the tube by recourse to intubation. It was thought that if an intubation tube could be inserted between the cords the external wound would close, and the metallic tube between the cords could then be withdrawn. Two attempts were made, both under ether. The tracheotomy tube having been withdrawn, the intubation tube was introduced into the larynx, but could not be passed below the cords. Either

from the effect of ether, or from the irritation of the instrument, or from paralysis of some of the muscles, a spasm of the glottis was set up, which rendered it impossible to push the tube down without the use of force, and this was not considered advisable.

Small localized overgrowths of granulation tissue in the track of the canula were easily controlled from time to time by the actual cautery. There was now some difficulty in obtaining a satisfactory view of the larynx owing to the depressed position of the epiglottis, a condition frequently observed after tracheotomy. The difficulty in this case was possibly increased by a slight cicatricial contraction in the left side of the larynx. When clearly seen, the larynx was found to be entirely free from neoplasms, and the left cord had resumed its normal appearance, though almost stationary in a position of adduction, the right moving slightly, but in a very limited arc.

The inner tube of the canula was now removed and the boy encouraged to use his voice, if possible, the tracheal orifice being closed by the finger, while the expiratory current passed through the fenestrum in the outer tube. Several changes were made in the position of this fenestrum, until it was found to correspond exactly with the tracheal lumen.

Faradization of the larynx was begun in the latter part of December, and has been continued with very little interruption, the sittings lasting about ten minutes twice a day. In January the patient was seen by another laryngologist, of New York, who found, in addition to what has been described, a slight swelling of the free edge and under surface of the cord.

The point of interest to the patient and his family was the withdrawal of the tube. Repeated trials with the cork had always produced a suffocative spasm, yet he was able to breathe comfortably, while his tube was being cleaned, for about ten minutes. It was evident that a nervous element entered largely into his inability to wear the cork. On the 26th of February, his attention being otherwise engaged, he wore the cork for eight minutes; that same afternoon for an hour, and, having once gained confidence in himself, for two, three, and four and a half hours at a time. Now he can keep it in place while eating and attending to his ordinary school duties.

Since the early part of March he has been taking minute doses of strychnine, which he bears very well, and latterly the tracheal end of the tube has been gradually shortened, so that it now passes just below the border of the tracheal wound.

How and when are we to get definitely rid of the tube? This is the all-important question for the patient and his friends; they find it difficult to reconcile the assurances of steady improvement constantly given by the physicians with the fact

that the boy is not yet able to dispense with his tube. The answer to the question must depend on the cause of the difficulty.

We have to consider the following possibilities:¹

1. A narrowing or complete obliteration of the passages of the larynx by a growth of granulations above and around the canula.

2. An impairment or complete loss of those functions of the larynx which regulate the admission of air through the rima glottidis.

3. Adhesion of the opposed surfaces of the cords.

4. Nervousness and spasm.

5. Collapse or flattening of the tracheal walls in consequence of too extensive division of tracheal rings.

6. Cicatricial contraction of trachea about the incision and the end of the tube.

From the boy's ability to pass several hours in comparative comfort with the cork in the tube during the day, the inference is plain that the obstruction is not in the parts above the tube. Phonation is clear and fairly good; the pitch of the voice is, however, altered, owing to the peculiar conditions present. There are no granulations in the track of the tube, nor is there pain about its lower orifice. The expectoration which comes through the tube is not tinged with blood, as it would probably be were granulations present. Often this expectoration is easily expelled through the mouth.

There seems to be no great amount of cicatricial tissue about the tracheal wound, though this is sometimes present in great abundance, as in the case reported by Stenier, where the growth of fibroid tissue acquired dimensions of half an inch. No folds of mucous membrane, owing to the relaxed condition of this tissue, can be discovered by the probe or by laryngoscopic examination; and the only apparent causes that prevent the withdrawal of the tube are the condition of paresis of the abductors of the cords and the nervous element in the case.

Considerable attention has very justly been called by nearly all writers upon the subject to this last factor in the management of all cases of delayed removal of the tube. It certainly enters very considerably into the present case; and its importance was impressed upon me by a case seen about four years ago, in which there was retention of the tube after diphtheritic croup. In that instance, the child, three years of age, would not tolerate the withdrawal of the tube for more than five minutes. Efforts to substitute an intubation tube for the canula proved fruitless owing to the impossibility of inserting the tube.

The little patient went on in comparative comfort for about a year. The father, a brewery hand, returned home, one evening, strongly intoxicated. Enraged at the sight of the tube, he

withdrew it rather roughly and threw it across the room; at the same time threatening with dreadful punishment every one who should endeavor to replace it. Terrified beyond measure, forgetting about her own condition under the impulse of alarm that controlled her, the little girl breathed easily for the remainder of the evening and required no further attention.

Another case reported by Lovett,² falls into the same category. A girl three years old, had tracheotomy performed May 1, 1881, for croup. The tube was removed the seventh day, and left out for about forty minutes, when it had to be reinserted. May 15th another trial was made unsuccessfully. June 3d the trachea was stitched to the edges of the skin wound, yet the tube had to be replaced. Several other unsuccessful attempts were made to remove the tube, and the child was finally dismissed. One evening, July 19, 1883, two years after her discharge from the hospital, after the mother had cleaned the tube preparatory to replacing it, the child said: "I do not want it any more; you need not put it in," and never had any trouble.

The dependence upon the tube becomes so great in these cases that it is easy to understand the nervousness which follows any attempt at withdrawal; and the most difficult part of the treatment seems to be the establishment of self-confidence on the part of the patient himself. In very young children this may be accomplished by subterfuge, or the patient controlled by fear; in older patients, however, the difficulty is greater.

Some attention is to be paid to the disused muscles, which have become weakened through long inaction, until, as in our own case, a condition of more or less complete paralysis of the abductors result. The corking of the canula, and the use of the larynx for phonation and respiration will, doubtless, assist in overcoming this difficulty. It is true that Trousseau has condemned the fenestrum in the tube as a useless and mischievous thing, as its sharp edges always cause irritation; but care in the location of the fenestrum, so that its edges have no point of contact with the soft tissue and a little mechanical skill in rounding the opening will overcome this objection.

The trying time for all the patients seems to be the period of sleep. Many succeed in passing the day very comfortably, but have paroxysms of dyspnoea as soon as the recumbent position is assumed, or when they eventually fall asleep. A certain amount of attention seems requisite to preserve the regular action of the parietic laryngeal muscles; and long continued exercise is often necessary before the desired result can be obtained.

I do not know that we can express in figures, or have any collected statistics bearing on, the proportion of cases in which the ultimate removal has been effected; but, while its withdrawal

¹Tupper. Boston M. and S. Jour., 1886.

²Boston M. and S., June, 1886.

is manifestly desirable, existence can be easily maintained for long periods with the tube *in situ*. Thus Uhde³ reports a case where the canula was worn for forty years; and Brinton⁴ and Morton each mention a case of twenty years' standing. These statements contrast rather strongly with the announcement made by Mongot to the French Academy, that few children reach adult age after tracheotomy; a statement based on the great rarity of the characteristic cicatrix among a larger number of French conscripts.

There is but one point more to consider and that is the condition of the patient, after removal of the tube has been successfully accomplished. The anxiety that has attended the progress of the case, will even then not be entirely allayed, for some peril still hangs over the patient. Fleiner⁵ in an elaborate article on "Stenosis of the Trachea after Tracheotomy" mentions a number of cases, in which there was sudden dyspnoea weeks or even months after the removal of the tube. At no time following its removal, until after the lapse of several months are we safe from the danger of sudden asphyxia, and the prognosis must be carefully held in reserve. Ross reports fourteen cases of polypi developing at the site of the cicatrix after tracheotomy; of these, four died before a second tracheotomy could be made; seven had a second tracheotomy (with five recoveries), two had a third operation and are still wearing the tubes. In forty cases of excessive granulation-growths from all sources, where the tube was worn for at least two months, sixteen were fatal, nineteen were cured and five are still wearing the tubes.

Dr. Lovett closes his article upon the subject with the statement that the treatment has been as varied as it has been inefficient. This is a rather discouraging view to take of the matter, and one that can hardly be sustained. Patience and perseverance, with a little help on the part of the patient, will yet succeed in overcoming the difficulties in many an unpromising case.

MEDICO-LEGAL ASPECTS OF SOME INJURIES OF THE SPINAL CORD.

Read before the Chicago Medico-Legal Society, October 6, 1888.

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—AND—

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Within a period of five years English railway companies have paid in damages in cases of alleged injury to the spinal cord, the enormous sum of £2,200,000, or \$11,000,000. In our own city, the greatest railway center in the world, and in

other parts of our country, large sums have been paid as compensatory damages in similar cases. \$300,000 it is said were paid to the sufferers in the Chatsworth accident, and the largest individual damages were paid in settlement of cases of spinal injury. Specific instances of the enormous sums which have been awarded to this class of obscure injuries are:

Case of Waterman vs. the Chicago & Alton R. R.—The plaintiff claimed large damages for spinal concussion said to be produced in an accident. Dr. Clark Gapen and other experts testified that injury was the cause of the patient's symptoms, while Drs. Senn and Whiting testifying as experts for the defense agreed in stating that the patient had locomotor ataxia. A verdict of \$23,000 was awarded.

Case of Holland vs. the Chicago & Eastern R. R.—The plaintiff, an employé of another line, was injured in a collision and afterward reported for work apparently well. He was not given employment. Shortly after this it was claimed that symptoms of spinal concussion developed and permanent disability followed. Large damages were claimed and the plaintiff was awarded the sum of \$23,000.

Case of Rozenzweig vs. the Lake Shore & Michigan Southern R. R.—The plaintiff having been put off a train at a place not a regular station, was walking across the tracks, and either tripped over some object or was knocked down, he did not know which. Spinal injury of an obscure type was alleged and heavy damages awarded. The case after final appeal to the Supreme Court of the State, was settled by the road paying to the plaintiff \$48,500 with interest, or in all over \$50,000 compensation.

Case of Phillips vs. the London & Southwestern Ry.—The plaintiff, a physician, was disabled about two years by a railway injury to the spinal cord. It was proved that he had possessed a practice worth \$40,000 per annum, and a verdict of \$80,000 was given. Dr. Steele, who has met Dr. Phillips during the past summer, informs us that he is, except for a slight lameness, quite restored to health.

In examining the expert medical evidence in the above cases one cannot but see the over-shadowing influence of the theories laid down by Erichsen in his work on "Concussion of the Spine." A careful and comparative examination of these theories of Erichsen with those of later investigators in neuro-pathological fields may be of interest.

Erichsen teaches, that there are two opposite and distinct conditions produced in the spinal cord by injuries. In one there are all the usual and visible effects of traumatism elsewhere—laceration of tissue, hæmorrhage into the spinal canal or substance of the cord and inflammation of the cord and membranes. In the other there

³Deut. Med. Woch. 1885.

⁴Phil. Med. Times. 1886.

⁵Arch. f. Klin. Chirurg.

are no definite structural changes, but only that condition which he describes under the term "anæmia of the cord," and which he himself admits can only be inferred and is not a well-proved pathological fact.

Cases of the first class, viz., those in which definite structural changes are produced, always give rise in his opinion to definite symptoms and are easily recognizable pathological states. In his ideas of the gross pathology we find nothing essentially different from the views of the older pathologists. Thus we find him describing the condition produced by myelitis as softening of the cord, notwithstanding the fact that modern investigation has shown that inflammation does not always produce softening, and that the latter may exist without myelitis. (Gowers.)

Grosser structural lesions are not the condition, however, which have given rise to conflicts of medical evidence. It is upon Erichsen's description of the second class of cases, viz., those in which there are no visible structural alterations, that the greatest and most numerous claims for compensation have been built up. It is well therefore, in view of the conflicts of opinion which have arisen, carefully to examine the evidence as to the existence of this second class of cases, described under the term "anæmia of the cord."

Accuracy in the use of scientific terms, may properly be demanded in a work which is so often quoted in medico-legal contentions. How much evidence is there then of the existence of any such pathological conditions as "anæmia of the cord?" Dana in his latest writings asserts: "Chronic spinal anæmia can hardly be placed in the category of distinct spinal affections." Gowers, in his work just from the press, embodying the results of original and exhaustive research says, in discussing anæmia and hyperæmia of the cord: "The condition of the vessels of the spinal cord after death affords no indication whatever of their state during life. . . . Local variation occurs only in the local hyperæmia which attends inflammation and the anæmia which results from pressure; hence the occurrence of variations in the state of the vessels of the cord and the effects that such variations may produce are matters of inference from symptoms observed during life, symptoms that are themselves open to various interpretations. Where the ground is barren of facts, theory is always luxuriant. Anæmia or congestion of the cord affords a ready explanation of symptoms, the cause of which is unknown, and it is scarcely surprising, therefore, that such an explanation has often been given. Some surprise may, however, reasonably be felt at the absolute confidence and precision of detail with which these states have been invoked as morbid processes, when the opinions expressed rest not upon one tittle of definite evidence. Positive assertions always receive some credence, however unwar-

ranted the assertions may be, and positions incapable of proof are also sometimes incapable of disproof. It would be futile and useless to attempt to refute in detail the various statements that have been made regarding anæmia and hyperæmia of the spinal cord. . . . We know nothing of it as an independent condition; nevertheless, volumes might be filled by the collected descriptions of the varieties and symptoms, descriptions in which the unrestricted play of "scientific" fancy has elaborated a symptomatology for the separate congestion of every part of the spinal cord." It is doubtful if any symptoms can be, with confidence, assigned to mechanical congestion.

In the face of these modern views, what weight shall be attached to the opinions on matters of obscure pathology of a writer who not himself a specialist in neurology, nor possessed of any of the recent methods of investigation, nevertheless lays down such positive dicta. Views which were published in 1866, twenty-two years ago, remain, according to his statement in the latest edition, "substantially unchanged" to-day. Within recent years the minute and gross pathology of the spinal cord have been almost entirely re-written. Intelligent discussion of the structural changes which occur in the cord in disease and injury are impossible without reference to the investigations of Charcôt, Brown-Séquard, Gowers and Bramwell. Yet, most of these investigations have been made since the publication of Erichsen's treatise and therefore find no place in his system of pathology. This would not be surprising, were it not also true, that Erichsen holds to substantially the same ideas in his latest writings. What weight should now attach to expert evidence based only upon inference from clinical experience, when diametrically opposite testimony rests on the firm basis of post-mortem and microscopic investigation?

That we may not appear in any particular to misrepresent this writer's opportunities for exact knowledge, we may quote his own words in his latest edition: "No instance (of post-mortem examination) has occurred to me in hospital, or in private practice, in which I could obtain one . . . The only case indeed on record with which I am acquainted, in which a *post-mortem* examination has been made, in a person who died from the remote effects of concussion of the spine, was published by Dr. Lockhart Clark," etc., etc., etc., in 1886.

What is surprising is not so much that these opportunities were wanting—for it is only of late years and in a few hospitals anything like systematic work has been in this line—but rather that on such a small basis of known fact so large a structure of inferential pathology has been built, and that it should be stated with the positiveness of well-proven facts and should have carried such

weight in the medical world. Even with the same method and from the same observed facts, we find no agreement among those who would dogmatize as the existence of lesions in preference to discovering them in the dead-house and with the microscope. Erichsen has collated a large number of cases from various sources to illustrate certain theories of spinal concussion. Page, on the other, pursuing the same clinical method, has drawn largely from the same sources and even from Erichsen's own published cases to support views of a nature directly opposite. Neither writer has utilized modern methods of study, and we are left with the impression that much of this discussion is but threshing old straw, so far as scientific results are concerned. If the conclusions of these older writers are in any measure weakened by being thus at variance, they certainly are still more discredited when it is found that they are at variance with modern ideas.

Nevertheless, the old, not modern views, still exert a deciding influence in many cases of alleged spinal injury which assume a medico-legal aspect, and many an expert has testified in court substantially to the ideas of a quarter of a century ago, in seeming ignorance of the revolution which cellular pathology has brought about in the last decade.

Erichsen is in accord with later writers in stating that when there have been actual structural changes in the cord, well-marked symptoms are developed. He loses sight, however, of the additional fact, that long continued functional disease produces structural change, when he advances his argument in behalf of "railway spine" and claims it is essentially a functional disorder and therefore not accompanied by the usual symptoms following structural change.

Many months, in the opinion of this writer, may intervene between the time of injury and the beginning of the symptoms of so-called spinal concussion. If, however, the two facts are connected, some functional or structural change must have been going on in the interval. If functional disorder cannot exist except transiently, it follows that the disorder must be, or become structural, or else cease to exist. But we have seen that structural disease produces definite symptoms and not vague and irregular phenomena. What becomes then of the theories of spinal concussion which, upon the assumed and wholly imaginary pathological state, known as "anæmia of the cord," build up a symptomatology equally vague and illusory? In this symptomatology have been included all the mental, psychical and cerebral symptoms which a person who has not met with an accident may suffer, as well as all the minor ills of each and every part of the body which could by any stretch of reasoning be traced to the nerve centers, and all are declared to have their origin in a condition of the cord which modern

pathology knows not, or recognizes only as transient.

If it be true that Erichsen's theories of pathology are undermined by the results of more modern investigators, what becomes of the vast superstructure of symptomatology which he has reared thereon? It is essential, if we would be scientific, that we refer only those symptoms to the spine which are known to be spinal. This is now very strongly insisted upon by writers too numerous to quote. No proven facts warrant the belief that mental and psychical disturbances, loss of memory, business inaptitude, depression of spirits and the like, have anything to do with the spinal cord. On the contrary these are truly cerebral symptoms to the best of our present knowledge, and, as such, can be understood and accounted for on plain pathological grounds. Serious they may be, but they are removed from the realm of the mysterious when we recognize their true origin and we can speak rationally of their prognosis and treatment.

But when these cerebral disturbances are referred to that vague state known as "spinal concussion," they seem to take on new terrors, and the patient sees in the diagnosis a dreadful portent of hopeless invalidism or gradual progressive decay. If once he has had Erichsen's picture impressed upon his imagination, he certainly will not lack for material out of which to build a gloomy prognosis. To all intents this writer lays down the opinion that any and every bodily ill may find its explanation in "anæmia of the cord" resulting from "spinal concussion." That this invites not only self-deception, but corrupt practices, we fear there can be no doubt, and such a state of affairs may well be a cause of alarm. Medical men have good reason to fear a condition of things which tends to discredit scientific medicine and the value of expert evidence. Lawyers have good cause to fear a state of affairs which may impose pseudo-scientific doctrine upon the courts in such a way that it cannot be sifted and analysed. Honest claimants are doubly interested in keeping false claims from being allowed to the prejudice of honest ones. Finally, courts themselves have most of all to fear a state of uncertainty in high expert authority, which will invite fraud and defeat the end for which courts of justice exist.

Spinal concussion, when used as Erichsen teaches, is a condition built up almost wholly of subjective symptoms. This renders malingering easy. To illustrate, a man who fears his back has been injured in an accident, consults a lawyer as to the liability of the corporation or individual for the occurrence of the accident. The lawyer—and there is a lawyer to every one hundred men in this city—sends the claimant to a physician—and there is a doctor to every one hundred men in this state—who goes over the ground very carefully with the claimant and asks him if he

suffers from such and such symptoms, and in order that there may be no mistake about it, gives the claimant a written statement of the symptoms usually occurring in well-marked cases of spinal concussion without structural lesion. The claimant, even if he be an honest man, after carefully questioning himself, discovers that he has become the possessor of an inaptitude for business, a mental disquietude, a pain in the back, etc., etc. If he be a dishonest man he studies his chart and has a stock of symptoms on hand when interrogated as to his condition, and in his business, it is "no trouble to show goods." We thus see that the way to imposition is made easy. Avenues of fraud are opened up, and capital, lawyers and courts are practically at the mercy of a clever malingerer. The writers of this paper wish to emphasize the importance of careful and not superficial investigation, and do not believe that the dogmatic precision of an old and inferential pathological which conflicts with modern pathological views, should give answer to the questions arising in alleged injury to the spinal cord.

REMARKS ON MEDICO-LEGAL ASPECTS OF SOME INJURIES OF THE SPINAL CORD.

Read before the Chicago Medico-Legal Society, Oct. 6, 1888.

BY HENRY M. LYMAN, M.D.,
OF CHICAGO.

I have listened with a great deal of interest to the valuable paper of Drs. Burry and Andrews, and I must subscribe most heartily to the propositions advanced in it. It is, as the Doctor has well said, true, that the minds of the profession have for many years been too much under the influence of the dogmas laid down in Erichsen's work on "Railway Injuries." I am thoroughly satisfied that a great deal of injustice has been done and carried out through the agency of the courts upon the basis of opinions that have been formulated in accordance with that book, and I think it is really a very necessary thing to frequently give a word of caution like this to the profession that they avoid falling into the trap which is unwittingly opened before them by such a work. It has been well said that the pathology of the work is old and the inferences drawn from the cases are many of them strained, and yet it must be acknowledged that there is a sufficiency of truth in a good deal that is advanced in it to make the errors that accompany it doubly dangerous. If I were to speak of books in comparison with one another, I should say a book like Page's, while it may be open in many particulars to the charge made against Erichsen's work, of being old fashioned and representing somewhat bygone pathology, of the two it is far the superior work.

It is written in a much more judicial spirit and I think much more really and fully represents the advanced views of the profession in these matters than does Erichsen's work.

My own observation in cases of this kind, leads me to feel that a very large proportion of the cases which have been reported and presented in the courts as cases of spinal concussion are really nothing of the kind; they are cases in which, when there is any real lesion, where any real injury has been sustained, it has fallen more largely upon the brain than the cord. Many of the symptoms presented by these patients can be much more accurately described by supposing the brain is the organ that has suffered. It is in cases of this class that so many of the numerous and ill-defined symptoms following an injury, occur; patients who suffer with no systematized lesions, with nothing that can be referred to any disorganization proper of the spinal cord, no true paraplegia or hemiplegia; the lesions are those largely of an irregular distribution where the phenomena are largely mental, and possibly, in many cases, intellectual, and we must refer them chiefly to the brain rather than the spinal cord. It is true of a great many of these cases that the symptoms presented are of this character instead of being symptoms of paralysis either of sensation, motion or nutrition.

We have a large class of cases presenting themselves after these injuries to which the most convenient term we can apply is hysterical; hysterical conditions following injuries. These occur in males as well as in females. We perhaps have more right to expect the existence of hysteria in females who have suffered injury, but many cases of males who have suffered injuries are followed by hysteria, which can only be ascribed to disorders of the cerebrum. In regard to these so-called hysterical symptoms—how far are they to be allowed weight in judging of the liability of a railroad? For example, in the case of an injury that has been sustained, the courts will hold that it matters not what the form of the disorder is, so long as there is a disorder, for the disorder is the consequence of the injury that has been sustained, and the party inflicting the injury is liable for it. There is a certain amount of truth in that proposition; it but must be taken into consideration that disorders of this kind are most intensely liable to exaggeration as a consequence of the peculiar conditions which surround patients who have undergone the experience passed through by the victims of a railroad accident. The injuries are of a nature to disturb the mental functions of the individual, and the anxieties that grow up, partly through the agency of physicians, and partly through the uneasiness attendant upon law suits connected with the railroad company, or parties implicated in the accident, lead to disturbances of the mind to a great extent, and we

should take those things into consideration in our estimation of the probabilities of recovery.

It is a matter of common observation, that when patients have been injured in this way and manifest these mental and intellectual symptoms conjoined with a certain amount of vital innutrition and disorder, when the mental perturbation has been removed there is a great improvement in the symptoms; so that the settlement of a claim against a railroad company is followed by a rapid improvement in the condition of the patient. That is a fact which is often laid hold of by a certain class of physicians and surgeons and used as an argument against the genuineness of the sufferings experienced by the patient. They say it was a matter of imagination, of self-deception, and sometimes go so far as to claim a form of malingering by the patient. But if you reflect upon the relation which exists between the mind and body, it is easy to understand how a person who is in anxiety of mind will suffer, in an aggravated degree, bodily symptoms, and will improve again. It must be kept in mind that many of these patients are really permanently injured, though they have not received any injuries that are enduring from a surgical point of view. There have been no fractures, perhaps; no permanent strains or sprains or dislocations; no wounds anywhere, no depressions of the cranium, or anything of that kind. Many of these cases, therefore, when they have passed out of the immediate care of the surgeon are considered cured, and surgically speaking they are cured; but we must remember a case may be cured surgically and yet not cured medically, and, therefore, a certain class of patients must be recognized as never recovering fully from these injuries; they recover surgically and to a certain degree medically; but, as in a case of inflammation of the spinal cord, when a patient is suffering from myelitis we get a recovery to a certain degree, in the majority of cases, but rarely a complete recovery.

The patients get to walking about with more or less degree of comfort, but never recover the power of locomotion they once had; they have not the power of endurance they once had, and in every respect they are weaker and inferior in their condition to what they were before the injury was sustained. That is something that should be recognized and kept in mind, therefore, that the opinions of physicians and surgeons who are called to examine these cases for injury, should be guarded. I do not know that there are any class of cases in which it is more improper to give a positive prognosis, than in those of severe injury. The probabilities are in favor of partial recovery, that the recovery will be progressive; and yet in every instance the possibility exists that the recovery will be arrested short of complete restoration, and it is impossible, so far as my knowledge extends, to judge in any particu-

lar case whether it is going to be a case that is completely curable or whether it will come to a standstill before recovery has been completed. There is a class of cases in which the difficulty is principally mental, and those cases may recover completely, I think; and yet it is not possible for the physician to predict positively in those cases, at an early period, that they are going to be of that curable character. And yet where there is no palpable lesion, no evidence of disorganization of the brain or spinal cord; where the female sex is present, especially in a person of comparative youth, and where there is the possibility of complete change of life and occupation coming in to assist, the prospects of recovery are good.

I remember a case related by Dr. Wood, of Philadelphia, where a young woman had sustained an injury in a railroad accident. She had been examined by numerous physicians who had all given an unfavorable prognosis; not less than ten neurologists assured her she would never recover. That woman came under the care of Dr. Wood and he assured her there was nothing but hysteria the matter, and put her upon a course of treatment; and finally she engaged in a love match which terminated in marriage and she was completely cured. I think there is nothing so good as something to absorb the patient and turn the current of thought entirely from oneself and maladies, into another channel; it is the very best influence toward restoration of health to the mind; and in many of these cases it is a mental disorder that exists. I do not wish to take up the time of the Society, but would call attention to the fact that there is a class of people who are in such a state of mental instability that it needs only an excess or injury of some kind to start them upon a course of mental disorder which will have, we know not what termination. In patients of that class, injured by railroad disaster, followed by unfavorable opinions of men in high standing, and by long litigation, nothing is better calculated to set up a state of ill-health, the termination of which can never be predicted.

PROFESSOR HEINRICH VON BAMBERGER died at Vienna on Nov. 9 after an illness of several weeks' duration. He was born in 1822, near Prague. In 1850 he went to Vienna to work with Oppolzer, but went to Würzburg in 1854 as Professor of Clinical Medicine. Upon the death of Oppolzer he returned to Vienna, and in 1872 was appointed Director of the Medical Clinic in the Allgemeines Krankenhaus. Bamberger was an exceptionally gifted man. As Nothnagel recently said of him: "He thought as a *savant*, and practiced as an artist. Therein lies the secret of his fame as a physician, as diagnostician, and as clinical teacher. . . . The name of Bamberger, the clinician, links itself brilliantly to those of Skoda and Oppolzer."

MEDICAL PROGRESS.

THE MILK-CURDLING FERMENT OF THE STOMACH.—DR. E. G. JOHNSON has studied the action of the milk-curdling ferment of the stomach in the clinic of Professor Riegel of Giessen, and subsequently in the Sabbatsberg Hospital, Stockholm. Researches were made in 24 cases on the presence of the ferment and the pathological conditions relative to it. Fourteen of these patients suffered from hyperacidity, accompanied in four of them by moderate dilatation of the stomach. In one of these latter there was also hypersecretion of the gastric juice. One case had considerable dilatation of the stomach with hyperacidity and marked hypersecretion. In three cases the dilatation was insignificant, but there was hyperacidity, complicated in one case by slight, and in another by very great, hypersecretion; in the third case the hyperacidity was accompanied by chlorosis. Three other patients suffering from hyperacidity were also the subjects of gastric ulcer. Dr. Johnson also examined four cases of hyperacidity with neither dilatation nor hypersecretion, of whom three were chlorotic; a case of catarrhal jaundice, four cases of severe chronic dyspepsia, and five cases of carcinoma of the stomach. The contents of the stomach were removed while the patient was fasting, and also four or five hours after food had been given for the purpose of the observations. Dr. Johnson sums up his researches as follows: 1. The milk-curdling ferment is a constant product of the glandular secretion of the stomach, and it is met with at all periods of digestion except in cases of cancer of the stomach, in which it is never found. 2. The ferment was also found in the hypersecretions of the gastric juice of a fasting patient after his stomach had been washed out the previous evening. 3. Gastric juice which contains hydrochloric acid, and which when neutralized causes coagulation of milk, does not appear to be affected in its action by the greater or less amount of acid contained in it at first. 4. The milk-curdling ferment does not pass into the urine. 5. The ferment is easily destroyed by an excess of alkali, and it is probably on this account that it does not pass into the fæces under normal conditions. 6. During fever the ferment appears to be absent from the stomach. 7. The ferment causes coagulation more slowly in boiled than in fresh milk. 8. During the coagulation of milk by the ferment the reaction remains neutral, and lactic acid is not met with after coagulation.—*The Lancet*, Nov. 17, 1888.

ALCOHOLISM.—DR. LEWIS D. MASON discusses, in the *Quarterly Journal of Inebriety*, the etiology of dipsomania and heredity of alcoholic inebriety. He has collated a large amount of testimony bearing on this subject; and from this, and from

his own experience, which has been very large, he draws the following conclusions: first, alcoholism in parents produces a degenerate nervous system in their children, and subjects them to all forms of neuroses, epilepsy, chorea, paralysis, mental degeneracy, from slight enfeeblement to complete idiocy and insanity; second, alcoholism in parents produces a form of inebriety in their children known as dipsomania, which in the large majority of cases is inherited in the same manner that other diseases are inherited, and we can with propriety and correctness use the term "alcoholic or inebriate diathesis" in the same sense that we use the term "tubercular," or other terms indicating special tendencies to other inheritable diseases.

TREATMENT OF PNEUMONIA BY DIGITALIS.—M. PETRESCO has treated a large number of cases of acute pneumonia with great success by the administration of four grams of digitalis leaves in infusion every half-hour, by mouth. The infusion is prepared with 4 grams of digitalis leaves to 200 grams of water and 40 grams of syrup. The disease is generally checked in three days. The fever and all the physical phenomena, local as well as general, disappear rapidly. In spite of the large doses he has never seen poisonous effects, tolerance having been uncontestedly proved by 577 observations. By this treatment it is claimed that the mortality of pneumonia has been reduced to 1.22 per cent.—*Lyon Médical*, October, 1888.

TREATMENT OF INFANTILE DIARRHŒA.—ZINNIS recommends for the diarrhœas of childhood, particularly the cases characterized by green evacuations containing undigested casein, the withdrawal of all starchy food, and the following mixture:

Aqueæ scænic	75 parts.
Liquor. calcis	6 "
Bismuth. subnit	3 "
Syr. aurant. flor	15 "

S. Give a dessert-spoonful every 2 hours.

—*Deutsche Med. Wochenschrift*, Sept. 6, 1888.

USES OF CREOLIN.—LICHTWITZ thus sums up the uses of creolin: It is an antiseptic, a disinfectant, a hæmostatic, and non-poisonous in doses as large as 120 grains. In gram doses in capsules it is useful against tænia solium and oxyuris vermicularis. Its action is excellent in parasitic skin diseases, and in eczema. Given internally it is a valuable antifermentative. It may be used by inhalation in laryngeal and tracheal troubles, and the powder may be applied locally. Creolin powder has a good effect in some cases of keratitis.—*Nouveaux Remèdes*, October, 1888.

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SATURDAY, DECEMBER 15, 1888.

THE AMERICAN ACADEMY OF MEDICINE, AND
MEDICAL EDUCATION.

In reading the abstract of the proceedings and papers presented at the recent annual meeting of the Academy, in THE JOURNAL of the 8th inst., we noticed some statements calculated to convey impressions not in strict accordance with the facts of history. It is natural and commendable for members of any legitimate society to magnify the importance and influence of the society to which they belong, provided they do not detract from the labors of others or use such expressions as lead to erroneous inferences. The abstract to which we have alluded represents the writer of "A Few Words Concerning the Academy" as making the following statement: "The Academy was organized in 1876, at a time when the standard of medical education was at its *lowest point*. Medical institutions were numerous and their doors thrown open to all, irrespective of qualifications. . . . It was at this period that the Academy began to explore these novel methods of manufacturing medical practitioners."

If the writer of these statements will turn to the "Reports on a Uniform Standard of Medical College Requirements, and on Medical Education," contained in the first volume of the Transactions of the American Medical Association, 1847-8, he will find that the standard of medical college education at that time, demanded no preliminary education, and attendance on only two

courses of college instruction averaging sixteen weeks each, the minimum being thirteen and the maximum eighteen weeks. Less than half of the colleges required attendance on any clinical instruction, and only one-third made dissections obligatory upon the student. This being the standard of medical education in 1846, if it continued to deteriorate during the succeeding thirty years and reached its "*lowest point*" in 1876, it must have required a microscope to find where it was at that date, when the Academy came into existence. But what are the facts? At almost every succeeding annual meeting of the American Medical Association an able report on the subject of medical education was made and discussed until 1866, when it culminated in the recommendation that a convention of delegates from the medical colleges alone be held for the purpose of maturing and adopting a uniform plan and standard of medical education. The convention was held in Cincinnati, May, 1867, and was presided over by the eminent Alfred Stillé, Professor of Practice of Medicine in the University of Pennsylvania. During three days of earnest and harmonious deliberation, a full graded three years' course of medical college instruction, including a fair standard of preliminary education before commencing medical study, practical anatomy, and hospital clinical instruction was adopted, and laid before the faculties of all the colleges in this country. A second convention was held in May, 1870, the whole subject again discussed and the same liberal graded plan was re-adopted, and the same received the unanimous sanction of the American Medical Association. In the meantime the Chicago Medical College had been established in 1859, seventeen years before the organization of the American Academy of Medicine, with a three year graded system and six months college term, and in 1871, five years before, the Medical School of Harvard University adopted the same, to be soon followed by the Medical Department of the Syracuse University, and the old University of Pennsylvania. The colleges generally had increased the length of their college terms and the number of their professorships. Indeed, it was the steady progressive development of professional opinion by the reports and discussions in the American Medical Association, the college conventions alluded to, and the State Medical Societies, during the thirty years following 1846,

that made it possible to organize and maintain the American Academy of Medicine in 1876, and the Illinois and many other State Boards of Health since.

THE MEDICAL COLLEGE OF VIRGINIA.

In another department of this week's issue of *THE JOURNAL* will be found a letter on this subject from DR. J. S. DORSEY CULLEN, Dean of the Faculty of the Medical College of Virginia. The first paragraph of the letter is of such nature that we would be fully justified in refusing to publish it. The English language is broad and flexible enough to permit one to be severe and critical without being offensive, or violating its rules of orthography and syntax.

As every one must know, individuality is dropped in editorial writing. It is a well-settled principle that the editor of a journal is responsible for unsigned articles. While the editor may not write all that appears in his editorial pages, whatever appears therein has his full consent. An editor cannot allow personal prejudices to direct or influence articles for which he is responsible. Dr. Cullen's position of claiming to respect *THE JOURNAL*, but at the same time caring nothing for an opinion expressed in its editorial columns, and opening his letter with an offensive paragraph, is, therefore, as paradoxical as his first sentence is ungrammatical.

Whether or not the statements made in *THE JOURNAL* concerning the Medical College of Virginia are "flagrantly at variance with the truth," we leave our readers to judge from the facts already and to be presented. Dr. Cullen states three charges made against the College by its *enemies*. *THE JOURNAL* is not an enemy of this College, and does not feel itself called upon to take part in a personal controversy between the College and its enemies. It does feel called upon to expose any medical college that graduates incompetent men; it has that right, and will do so whenever it has the facts to go upon.

Dr. Cullen seems to have misunderstood the charges made by *THE JOURNAL* against his College. Briefly they were as follows: 1. That it has, with some other medical colleges, done bad work by graduating incompetent men. 2. That it was, at least from January, 1888, to the time the editorial articles appeared in *THE JOURNAL*,

opposed to the Medical Examining Board of Virginia. 3. That in January, 1888, the bad work of the College was practically admitted by the fact that the students of the College, supported unofficially by members of the Faculty, went before a committee of the Virginia Legislature and asked that the students of the Medical College of Virginia be exempt from the State Examinations. We did not say that the Faculty of the College was opposed to the *establishment* of a State Medical Examining Board; we knew the contrary, as shown in *THE JOURNAL* of Sept. 8, p. 346. In the same issue we stated the so-called reasons given by the students of the College to the Legislature why their graduates of the College should be exempt from State examinations. Some members of the Faculty must certainly have seen the preposterous document of the students; and that the students were allowed to stultify themselves by it without protest from the Faculty is at least presumptive evidence that the Faculty considered it a proper article to emanate from their College. The members of the Faculty should have considered it a duty to say to the Legislative Committee that they could not approve of the memorial presented by the students.

The facts already presented in *THE JOURNAL*, including the table in Dr. Cullen's letter, already published in our issue of Nov. 24, p. 746, are proof enough that the Medical College of Virginia has not done good work since January, 1885. The table shows that some other colleges have done worse work; but it is no excuse for grand larceny that some one has committed murder. Dr. Cullen is quite right in saying that the Medical College of Virginia "had the smallest number of graduates rejected of any college whose number of applicants were (was?) equal to it (?)," seeing that no other college had an equal number of applicants by 23. Dr. Cullen finds that about 7 per cent. of the graduates from the Medical College of Virginia have been rejected by the Virginia Board. We believe that 8 is not "about 7 per cent." of 57, but 14.03 per cent. We did not find it necessary to establish the bad work of this College by comparing its work with that of other colleges; 14.03 per cent. of rejected applicants before the State Board is quite enough evidence of bad work.

If Dr. Cullen wishes to know why more was said of the Medical College of Virginia, in our

editorial articles, than of other colleges doing as bad or worse work, we may say that it was because the Faculty officially endorsed the establishment of the State Board of Examiners, and afterwards individually opposed the Board before the Legislature; because of the action of the students of that College in petitioning the Legislature of Virginia to exempt its graduates from the State examinations, and their reasons therefor; because the Faculty did not protest against this petition, and because of the statements made to the Legislative Committee by members of the College Faculty. The action of the students was substantially, though unofficially, it is said, endorsed by the members of the Faculty (except Drs. John N. Upshur and Geo. Ben. Johnston). If Dr. Cullen does not remember what the members of the Faculty said before the Legislative Committee, we can refresh his memory by publishing their statements. In regard to the misstatements refuted by Dr. Cullen at Norfolk, we can only say that none have been made in *THE JOURNAL*; and as to the statements that we have made, they have been refuted neither at the Norfolk meeting nor in the letter from Dr. Cullen in this issue.

We noted with pleasure the position taken by Dr. Cullen at the Norfolk meeting of the Medical Society of Virginia in regard to the State Examining Board. Inasmuch as he represents the Faculty of his College, until there is evidence to the contrary we shall accept his action as a promise that the Medical College of Virginia has entered upon an era of better work.

THE DIETETIC USE OF SACCHARIN.

In a recent number of the *Lancet* Drs. THOMAS STEVENSON and L. C. WOOLDRIDGE record some experiments made to determine whether saccharin is poisonous or not when given in excessive quantities; and if it is not poisonous under these or other conditions, whether its use in moderation interferes with the digestive processes, so as to render it advisable to forbid its use as a substitute for sugar. Saccharin is not a food in any sense; but it is recognized that there are many circumstances under which it is necessary to have a sweetening agent to take the place of sugar. As to the non-toxic nature of saccharin the experimenters have no doubt, since their experiments confirm those of reliable investigators on the Con-

tinent. Saccharin has decided antiseptic properties, and in sufficient quantities is capable of stopping the action of organized ferments. As regards its extracorporeal action on the soluble ferments, as regards the peptic digestion of fibrin 0.1 per cent. of saccharin has no retarding influence, while 0.25 per cent. slows the process decidedly, and 1 per cent. greatly retards it: 0.1 per cent. of saccharin is equivalent to 30 per cent. of sugar, which may be said to be a dietetic impossibility. The diastasic solution of starch is not hindered by 2 per cent. of saccharin. The addition of saccharin to urine hinders ammoniacal fermentation—as does ingestion of saccharin.

As regards the intracorporeal action of saccharin, it was found that a gram of the substance, equal to more than eight ounces of sugar, did not interfere in the least with the gastric digestion of the dog. The article used in the experiments was "soluble saccharin," equal to about nine-tenths its weight of pure saccharin. It is as soluble in water as table salt, and when properly diluted is scarcely to be distinguished from cane sugar. Drs. Stevenson and Wooldridge conclude that (1) saccharin is quite innocuous when taken in quantities largely exceeding what would be taken in an ordinary dietary; (2) it does not interfere with nor impede the digestive processes when taken in any practicable quantity; (3) it may be taken during an extended period without interfering with the digestive and other bodily functions. There is, then, no reason to think that its continual use may be in any way harmful.

EDITORIAL NOTES.

AN ARMY MEDICAL BOARD will be in session in New York City, N. Y., from May 1 to 31, 1889, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies. Persons desiring to present themselves for examination by the Board will make application for the necessary invitation to the Secretary of War, before April 1, 1889, stating the place of birth, place and State of permanent residence, and enclosing certificates based on personal knowledge from at least two persons of repute, as to American citizenship, character and moral habits. Testimonials as to professional standing, from Professors of the Medical College from which the

applicant graduated, and of service in hospital from the authorities thereof, are also desirable. The candidate must be between 21 and 28 years of age, and a graduate from a *Regular Medical College*, evidence of which, his Diploma, must be submitted to the board. Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

ISOLATING "LUMP-JAW" CATTLE.—The Secretary of the State Board of Live Stock Commissioners reports that the Agent of the Board at the Union Stock Yards, Chicago, has, since the 15th of October, when he was placed there, isolated 148 cattle diseased with lump-jaw, and all but one of these have been slaughtered by the owners without cost to the State, thus preventing their going into the country to again spread disease. The action of the Yard Company in ordering the carcasses tanked has prevented the placing upon the market of diseased meat, which is likely to convey the disease to human beings. The Stock Yard officials and the commission men generally are co-operating heartily with the State Board in preventing the spread of the disease by absolutely refusing to handle any animal affected with the disease. The Board of Live Stock Commissioners has placed an agent at the National Stock Yards at St. Louis to inspect and isolate diseased cattle.

A NEW URINAL has been invented by a German firm. The long bag, which hitherto was hanging in an uncomfortable manner the whole length of the leg, is done away with, and its place taken by a bag attached to the waist and extending horizontally, the urine being kept at the bottom of the bag and spreading over its entire width, instead of accumulating at one point. Moreover, a pump and sucking apparatus is connected with the urinal for the purpose of making the reservoir air-tight and allowing the urine to flow very quickly by means of a valve into the lower part. The discharge is effected in a comfortable, very clean, noiseless and non-conspicuous manner, the emptying hose being mechanically opened, when the fluid runs away to the last drop.

ABNORMALITY OF THE AORTIC ARCH.—At the meeting of the Anatomical Society of Great Britain and Ireland on Nov. 7th, Mr. Gordon

Brodie related a case of abnormality of the aortic arch, in which the innominate arteries (?) were absent, being replaced by a short, thick trunk, which gave off two branches ascending on either side of the trachea to the place of the common carotids, that on the right giving off one corresponding to the vertebrals. Next in order from the arch was the left vertebral, which entered the foramen in the transverse process of the fifth cervical, and gave a branch to the thyroid. Another branch arose from the first part of the subclavian on the left side. The right subclavian arose as a fourth branch from the arch, and passed behind the cesophagus and trachea.

THE PROFESSION IN NEW MEXICO.—The Territorial Board of Medical Examiners of New Mexico made its report to the Governor on Nov. 29. There are 1,291 persons practicing medicine in the Territory. Of these 834 are regulars, 151 homœopathic, 44 eclectic, and 264 non-graduates entitled to certificates owing to length of practice in the Territory. The Board revoked two licenses during the year, one for unprofessional and immoral conduct, and the other for passing a forged diploma and obtaining a license to practice. Eight have been obliged to leave the Territory to avoid prosecution under the act.

FALSE CERTIFICATE OF DEATH.—A physician in St. Paul, Minn., recently gave a certificate of death to the city health department, in which "sore throat" was given as the cause of death. The Health Officer, Dr. Kilvington, refused to accept it, and the physician then substituted "scarlet fever" for sore throat. The case should receive, and doubtless will have, full investigation. This kind of evasion of the law is both criminal and contemptible, and richly deserves punishment. Other cases of failure to report contagious and infectious diseases, are reported from St. Paul and Minneapolis.

INTUBATION OF THE LARYNX.—Dr. F. E. Waxham reports fifteen cases of intubation recently coming under his care, with ten recoveries, or 66 per cent. Out of a total of 173 cases there have been fifty-three recoveries, or 30 per cent., and of his last fifty cases there have been twenty-two recoveries, or 44 per cent.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION met in Birmingham on December 4, with a large number in attendance.

SPECIAL ARTICLES.

HISTORY OF THE SEAL OF THE NINTH
INTERNATIONAL MEDICAL CON-
GRESS AND OF THE COMMEM-
ORATIVE MEDAL OF THE
CONGRESS.

As it may, at some time, be of interest to know the origin and history of the seal of the International Medical Congress of 1887, and also of the medal struck to commemorate the Congress, it is essential to collect the data now, and put the facts on record. This can be done most accurately by publishing the letter of Dr. J. M. Toner, written at the time to Prof. Henry H. Smith upon the subject. This letter, with the addendum, is supplied at our request, and furnishes a complete history of the matter. To make the history more complete, we append correct cuts of the two sides of the medal.

WASHINGTON, D. C., April 20, 1886.

PROF. HENRY H. SMITH, M.D.,

*Chairman Executive Committee of the Ninth
International Medical Congress:*

Dear Doctor:—Your letter requesting me to prepare a design for a suitable seal to be used on the official papers and publications of the Ninth International Medical Congress which is to meet at Washington, D. C., September 5, 1887, has been received. In addition to the seal, I fully agree with you in the sentiment that the occasion of the assemblage of representative medical men from all the civilized nations of the earth, gathered at the Capital of the United States, will be so notable an event as to deserve to be commemorated by a suitable medal. Since the receipt of your letter I have given such thought to the subject as I could, and have now the honor to submit for your consideration the enclosed drawings as a design for one side of a medal, and I propose that the same figures be engraved and used as the seal to be attached to official documents by the officers of the Congress. For the reverse of the medal I suggest that a figure of the head of Washington be adopted. A most excellent specimen of portraiture in medallic art is that of the head of this, the greatest man the world has produced, modeled from the Houdon plaster cast which was taken of him during life and engraved at the United States Mint in Philadelphia. This die or model can, I have no doubt, be obtained for your purpose. Washington's bust will properly symbolize the New World and our progress in civil government, as well as the arts and sciences in our country.

If, however, the bust of Washington does not seem to your committee as appropriate, then I propose that the symbolic figure of Europe and America, a rough sketch of which I enclose, be substituted. The group of figures on the medal

is intended to symbolize medicine. Æsculapius, the inventor of the art, is here represented as of noble and venerable form, draped in classic costume, seated, holding his staff entwined by a serpent, and attentively examining a sick child, which a mother seated on a low stool holds upon her lap. Two men are represented as standing soliciting the services of the physician, one with a staff and a bandaged head, the other supporting himself upon a crutch. The only accessory to the figures evoked by the artist is the Roman altar which is placed partly behind the chair of Æsculapius, and around which twines a serpent in the act of depositing a medicinal plant in a cup upon the altar. To typify medicine the classic figure of Æsculapius, which tradition and the arts have brought down to our time, has been accepted. The serpent and the other emblems which usually accompany his portrait are of classic origin and will be readily understood by the student of medicine, so that it is scarcely necessary to describe them, and yet a brief reference to their meaning as given by the ancients may be pardonable. It is known to scholars that Æsculapius, the god of medicine, was claimed to have been of divine origin—the offspring of Apollo and Coronis. The mother, concealing her pregnancy, withdrew to the forest in the neighborhood of Epidauris, and there brought forth a son and left him exposed on the mountain. The child was preserved by a stray goat, which nourished him with its milk, while the goat-herd's dog guarded him from injury. A shepherd watching his flock discovered the child, but was alarmed at seeing the infant surrounded by a resplendent halo of light, and fled, proclaiming that he had found a divine being. The infant was taken by Trigona, the wife of the goat-herd, and carefully reared until he reached an age to profit by the teachings of the famous Centaur, Chiron, under whose instruction Æsculapius attained wonderful proficiency as a physician. His great knowledge of the healing virtues of plants and other substances, and his skill in curing diseases and in the treatment of wounds, at length elevated him in the esteem of the age to the dignity of the inventor and god of medicine. The worship of Æsculapius was first established at Epidauris, and afterwards spread to and throughout Greece. In the beginning he was adored under the form of a serpent, though subsequently many statues were erected in the human form to his honor. The serpent is the symbol of renovation and eternity everywhere in classic sculpture, and graphic representations accompany the god of medicine. It is also the accepted symbol of health and life, and in one or another position is represented in all the statues of the god, and usually twining around his staff. One of the traditions as to the origin of this association of the serpent with the god of medicine is the following: While Æsculapius

was in the house of Glaucus, whom he was engaged to cure, and while standing with his staff in his hand absorbed in thought, a serpent came and twined around it, which he killed. Shortly after another serpent came, carrying in its mouth an herb, by the touch of which it recalled to life the one that had been killed. Æsculapius, observing the restoration of the dead serpent to life, took the same plant and used it with like effect in restoring health and life to men. This power, however, offended Pluto, because it diminished the number of the dead. Zeus therefore killed Æsculapius with a flash of lightning but, at the request of Apollo, he was placed among the stars.

Æsculapius is frequently represented standing, but a few classical groups exist which show him seated; one on a throne with his daughter Hygieia, the goddess of health, feeding a serpent, and Telesphorres, one of the minor gods who presided

once the sympathy of the beholder. The two men of good figure present evidences of requiring the skill of the physician, and add to the effectiveness of the group. The Roman altar with the serpent depositing a medicinal plant in the cup is classical in its origin and assists to complete the symbol of the origin of medicine.

Should your committee deem it wise to arrange for a medal I trust you will have it executed in the best style known to the art, and that it be left optional with the members to subscribe for it or not as they may elect. The taking of the medal of the Congress of 1881 in London was entirely voluntary. Its cost was five dollars. The one proposed for the Ninth Congress will cost the same; this amount to be paid at the time of registering. The medal to be delivered to subscribers as soon as it can be made.

The London medal had on one side the same



over convalescence, dressed in a monk's cloak and hood, standing by her. As accessories, artists have availed themselves of the figures of the goat and the dog which nourished and protected the infant god, and also of the cock which was frequently sacrificed to Æsculapius. But none of these have been introduced here. The head of Æsculapius, as represented in the best antique statues, much resembles that of Apollo, the features regular and of benevolent expression, the hair trained to ascend from a massive brow, parting in the middle and then falling down over the temples in a profusion of curls like the mane of a lion, and wearing a full though short and curling beard. The effect obtained by the artist in this group is pleasing. The pose and figure of Æsculapius is good, and his seated attitude gives him the air of earnest benevolence in the exercise of his humane office. The infant as presented by its mother enlists at

symbolical figure which appears on the seal of that Congress, and on the reverse side the bust of the Queen.

I would further suggest that you would submit the drawing for the medal to Mr. Barber, designer and engraver in the United States Mint in Philadelphia, and make inquiry of him as to size, cost, and the use of the model of the head of General Washington which I have referred to. He could give your committee at once an approximate estimate of cost, and thus enable you to come to a speedy conclusion of the matter.

Hoping to have the pleasure of greeting you and many old friends at the meeting of the American Medical Association in St. Louis in May, all full of wisdom and fortitude to work to the end of making the Ninth International Medical Congress a grand success, I remain, Yours very truly

J. M. TONER.

ADDENDUM, SUPPLIED BY REQUEST.

The design for the medal submitted as described in the foregoing letter was adopted by the Executive Committee as the seal of the Congress, yet they did not feel warranted in assuming the financial risk involved, and left the whole project of the medal to the registrar. The propriety of having a suitable medal engraved to commemorate the occasion seemed to be beyond question, and to justify the placing of a special notice regarding a commemorative medal at the bottom of the registration blank used by applicants for membership. This form to be filled up or not as members might choose to become subscribers. This view of obtaining the sense of the members of the Congress on the matter was approved by the Secretary-General, Dr. J. B. Hamilton, and that course adopted. The notice promised that a medal equal to that of the Congress at London would be ordered if a sufficient number were subscribed for at five dollars apiece to cover the expense, but if the medal was not ordered the money would be returned to the subscribers. A sufficient sum was raised to engage the services of Charles E. Barber, an eminent engraver and medallist employed in the United States Mint at Philadelphia, to re-draw the group of figures submitted and to place the following inscriptions in raised letters upon the face of the medal. The figures have been fully described in the letter to Dr. Smith. The inscription in a straight line beneath the group symbolizing medicine is, "*Washington, 1887;*" above and encircling the group, reading from left to right, "*International Medical Congress;*" beneath and completing the circle, reading from left to right, "*N. S. Davis, Pres. J. B. Hamilton, Sec.-Gen. E. S. F. Arnold, Treas. J. M. Toner, Reg.*" The reverse side of the medal contains a noble bust of Washington, and in a circular line above the head the inscription, "*United States of America;*" beneath in a circular line, "*Founder of the Republic.*" The artist has been eminently successful in producing a beautiful specimen of medallist art, which we hope in a degree appropriately commemorates the Ninth International Medical Congress, and will at the same time be an acceptable souvenir of the occasion.

J. M. T.

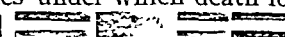
CASES OF SUDDEN DEATH IN NURSING INFANTS.¹BY PROF. PAUL GRAWITZ,
OF GREIFSWALD.[Translated² for the author by S. N. NELSON, M.D.]

The object of this communication is to call attention to a group of cases of death in nursing infants, which are of interest, because healthy

children died with the symptoms of suffocation without any preliminary evidences of disease. I have observed two such cases which throw some light concerning the cause of death. According to my idea, a greatly enlarged thymus gland is the real explanation of the sudden asphyxia in both cases.

The first case occurred about four years ago in Berlin. A child about 8 months of age was entrusted to the care of a servant girl. One morning this child, which hitherto had been entirely healthy, was found dead in bed. The feather coverlid, with which the little one was covered, seemed to be drawn somewhat high up over the mouth of the child. On account of these circumstances the attending servant girl was accused by the parents, and criminal proceedings were commenced against her for her carelessness. In consequence of this a judicial autopsy on the body was ordered, which I had the opportunity of conducting in conjunction with Professor Liman.

The little body was well developed and well nourished, and no traces of external injury could be found anywhere. Within the skull there was nothing abnormal. On opening the pleural cavity there presented a thymus gland of unusually large size, which covered over the greater part of the pericardium like a flat tumor, and which extended on both sides somewhat high up in the neck toward the thyroid gland. The gland had a lobulated structure and its surface was of a bright red color, studded everywhere with little punctiform hæmorrhages. On section similar little petechiæ could also be recognized in the interlobular tissue. In the pericardium, and also occasionally in the pleura, there were likewise found little extravasations. The heart was of normal appearance, the lungs were crepitant and entirely normal, and there were no foreign contents in the large or small bronchi. There were no changes worth mentioning in the organs of the abdominal cavity.

The preliminary opinions of both operators were that the child had died of suffocation. The proximate circumstances under which death followed we left undecided. 

In the oral proceedings which followed it was established that the coverlet had not encumbered the face of the child to any unusual degree, and then it became necessary for both of us experts to explain more clearly the cause of the suffocation. In this respect our opinions differed; for while Professor Liman attached no special importance to the relations of the thymus gland, I believed that this was the cause, although I had had no special experience in similar cases. Therefore I gave this to be my opinion before the judges, and insisted that I was obliged to attach much importance to the very abnormal size of the gland, since its anatomical position³ must have produced ex-

¹ A discourse delivered before the Stralsund Medical Society.² Deutschen Med. Woch., 1888, No. 22.³ In the skeleton of a child 8 months old, I find the dista

cessive pressure on the larger bronchi and the vessels lying behind it, and on this account it was not necessary to ascribe the death of the child to a crime.

The judges acquitted the accused servant; but they expressly declared that the judgment was given from lack of positive proof independent of the opinions of the experts.

Since that time until the present I have never met a case in which I could ascribe the death of the child to the thymus gland, although I have always had it in mind. I have just met a second case which in clearness exceeds the first in many respects.

The daughter of Mr. J., in Greifswald, was a strong, well-nourished and lively child, 6 months old, who had never suffered from cough or any other illness. On the 20th of April of this year the parents of this little child were rejoicing. The father held it in his arms and was playing with it in the presence of some relatives. Suddenly the child was seized with difficulty of breathing, the face became livid, the fists clenched, and in a few minutes the child was dead. One of those present, an experienced nurse, immediately attempted to restore the child by artificial respiration, but it was in vain. The death certificate was made dependent upon the result of the autopsy, which I performed on the 21st of April.

Report of the Autopsy: The body of the child showed externally no traces at all of any injury. The skin of the face, on the body, abdomen and arms is white; on the back and legs livid. The subcutaneous fat is extremely thick. On the thorax can be felt a plain rosary of rickets. The thorax is broad, the abdomen somewhat swollen. The muscles are in rigor mortis.

On opening the abdominal cavity the small intestines filled with gas press forward, the serous covering is grayish white, delicate, and in several places the light rose colored Peyer's patches show through. In the abdominal cavity there are no foreign contents. The diaphragm on both sides in the mammillary line is at the lower border of the fourth rib. *Under the sternum lies a thymus gland of unusual size.* It covers the greater part of the pericardium with two lobes held together in the median line by connective tissue. It forms a thick cap over the heart with the concavity inwards.

Upwards the left lobe becomes gradually narrowed, but the right one, interrupted by a constriction, proceeds as a long process, which ends tapering. The greatest length from this process to the base of the thymus is 7.5 cm., and the greatest breadth over the pericardium 6 cm., the thickness (about 1.5 cm.) is difficult to determine, since at the level of the division of the bronchi, a

somewhat thick accessory lobe projects from the left lobe and is separated from the chief lobe by a constriction; but it partially overlaps it and thus adds to the thickness. *Diameter from before backwards on a level just below the manubrium, is less than 1.8 cm.; the color is gray-rose, sprinkled with numerous superficial petechiæ of fresh red color; the consistency is somewhat hard;* the heart is relatively large and strong. In the visceral pericardium are numerous red extravasations of the size of the head of a pin. The muscles of the heart, the valves, and the foramen ovale are normal. In the cavity is considerable fluid blood, as also in the vena cava and in the veins of the neck.

The organs in the neck are removed in connection with the lungs. The mouth and pharynx are empty and so is the opening of the larynx, the trachea and the large bronchi. The epiglottis shows an exquisite lateral compression (asphyxiated position of Virchow). Its mucous membrane, like that of the pharynx, is congested. The interior of the larynx and the upper part of the trachea are of a considerably brighter red color, and a more marked injection commences just over the bifurcation, which corresponds to the narrowest spot between the sternum and the vertebral column. In the large and small bronchi there is some clear reddish froth, the lungs are considerably collapsed, everywhere containing air, bright red, and here and there on the surface are little blebs of interstitial emphysema. The œsophagus is empty. In the stomach are some milky contents and a considerable accumulation of gas. The mucous membrane is of a pale grayish white. In the intestines likewise, is thin chyme and gas, and the mucous membrane is of a delicate clear gray color with somewhat marked rose-colored, but not swollen, Peyer's patches. The spleen is large and full of blood with very prominent little follicles. The liver is full of blood but otherwise quite normal as are also the kidneys. The mesenteric glands are somewhat enlarged, grayish red, and the chyle vessels are filled with white contents.

Diagnosis.—Death from suffocation on account of hyperplasia of the thymus gland.

Conclusions.—Both of the above-mentioned cases have in common that there was no real illness like an asthma or any similar disease, but that the nurslings had died absolutely healthy. *In both of them the autopsy had given as the cause of death the report usually reached in a case of death from suffocation, and in both only the enlarged thymus was anatomically found as an explanation for the suffocation.* The minute hæmorrhages which were present in large numbers in both thymus glands exist in cases of suffocation and correspond to punctiform hæmorrhages in the pericardium and in the pleura.

Since, however, in the first case the suspicion cannot be absolutely removed that the servant had

from the manubrium of the sternum to the vertebral column to be 2 centimetres; therefore this is the dangerous point at which an enlargement of the thymus of 1 or 1.5 centimetres in thickness must essentially narrow the space.

covered the child too much, and thus had aided in causing death, yet in the second case the child was awake when the difficulty in breathing occurred, the parents and several persons were present, and every unnatural influence was thoroughly excluded. So far the facts go.

If it is now asked, whether nothing definite is known about cases of death of this sort, it must be assumed that the judicial physicians in general attach no importance to hyperplasia of the thymus, since nothing is found about it, at least in the mortality statistics of the well-known text-books of Liman and von Hofmann. On the other hand, quite a lively debate is carried on concerning the importance of the thymus in the 40th or 50th years. In Alexander Friedleben's book, "The Physiology of the Thymus Gland in Health and Disease, etc., 1858," is found a very fertile research into the literature of old authors and in a supplement, page 248, is "a case of sudden death in the first act of laryngismus," with which both of my cases correspond in a striking manner. Nevertheless it is evidently this very work which is chiefly to blame for the later neglect of these cases, since Friedleben, after a long criticism, came to the conclusion that we have overestimated its importance even in such cases of sudden death. Evidently, then, the frequency of really enlarged thymus glands was overestimated and a special disease was established, called *asthma thymicum*, which should always have such a hyperplasia as a foundation. Now it naturally happened that cases of difficult breathing in children were infinitely more frequently observed than enlarged thymus glands were found at the autopsies, so that all sorts of diseases of the lungs and air passages were classified under the great head of *asthma thymicum*.

On the other hand cases came under observation in which, as in both of those mentioned above, no sort of symptoms of disease existed and in which, nevertheless, a thymus gland was found, which occasionally was still greater than those belonging to nurslings that had died of *asthma thymicum*. What was more natural than that Friedleben came to the conclusion that these relations of size were to be considered normal, since the glands had caused no difficulty previous to the first fatal attack, and that he finally denied not only the *asthma thymicum*, but also the possibility of a dangerous hyperplasia of the gland.

I am not exactly in the condition now, with only my two cases, to contradict the authority of Friedleben, which is given on an astonishing number of individual experiences, but I believe that I can draw two conclusions which render doubtful the value of his negative standpoint. In the first place, Friedleben deals just as radically with tumors of the thymus as with hyperplasia of the thymus. The opinion of the older authors concerning cancer of the thymus,

of which Astley Cooper had one case, Friedleben treats with unmistakable contempt, although to-day an experienced pathologist could hardly be in doubt that these tumors, observed in people perhaps 19 years old, which are situated in the anterior mediastinum which lie over the pericardium, which take possession of the site of the thymus, and in some measure look similar to it in structure, belong to the class of Virchow's lympho-sarcoma thymicum. The reproach that the opinions of the older authors were somewhat lacking in exactness, can surely be acknowledged, but Friedleben's interpretations of these are all the more incorrect; because, although to-day those tumors are no longer called carcinomata, yet the occurrence of malignant lympho-sarcoma is one of the best known facts that we know about the pathology of the thymus, and a denial of malignant tumors of the thymus must put in question the infallibility of Friedleben's criticism.

My second point is an observation which I find in the second volume of Virchow's "Tumors," 1866. In the chapter on hyperplasia of the lymph glands, Virchow speaks as follows, concerning *asthma thymicum*:

"This asthma has lately been much doubted, and it has been struck out from the class of disease. With Hasse⁴ I consider it possible, yet it is difficult to decide the question surely, since generally other symptoms of disease are present at the same time, which sufficiently declare the danger of the disease, viz.: spasmodic catarrh. Nevertheless, a considerable hyperplasia has its influence on the respiration and circulation; but there have been only a few cases in which I have really seen considerable hyperplasia. Yet I have seen them. In my collection I have one preparation where the child died of asthma and where the thymus was so markedly enlarged that I could not understand how the possibility could be denied that the dyspnoea arose from its pressure. The gland weighed 6.5 drachms. It was $3\frac{1}{2}$ inches long, $\frac{3}{8}$ inch thick, and $2\frac{1}{2}$ inches in its greatest breadth, with an average of $1\frac{1}{4}$ inch. In a recent case I notice that the thymus measured 6 cm. in its greatest breadth, 1.5 cm. in thickness and 7.5 cm. in its greatest length, with an average of 6.5 cm."

Thus it is seen that the measurements which Virchow has considered as sufficient for an explanation of death by suffocation, almost completely correspond with those of my second case; and furthermore, that these cases must be very rare when only two such preparations are found in the very abundant material in the Berlin Institute.

Just so little can I give satisfactory reasons why a condition which evidently is of long duration can

⁴ The book of K. Ew. Hasse: Spec. Pathol. Anatomie, published in 1841, relies concerning the thymus on Becker, Hangstedt, Kopf and others, and in hyperplasia of the thymus considers of importance only in special cases the compression on the trachea; but rather on the vena cava and the right auricle.

produce so sudden death. I can only be guided by my experience, that very often have I found a satisfactory explanation of the cause of sudden death at the autopsy of young children, but every explanation is at fault concerning the question that the child was so very well immediately before the occurrence of death and then so unexpectedly and so suddenly died.

At any rate, the judicial physician's side of the question appears to me important enough to mention it here. It is proven that healthy nurslings can die a sudden death by suffocation without attaching blame to any one, or without thinking of suffocation by the mother or others; and perhaps this communication affords the opportunity of supplying a deficiency in pathological anatomy by further observations in judicial autopsies.

SOCIETY PROCEEDINGS.

Chicago Medico-Legal Society.

Stated Meeting, October 6, 1888.

THE PRESIDENT, E. J. DOERING, M.D., IN THE CHAIR.

DR. E. WYLLYS ANDREWS and DR. JAMES BURRY read a paper on

MEDICO-LEGAL ASPECTS OF SOME INJURIES OF THE SPINAL CORD.

(See page 841.)

DR. HENRY L. LYMAN made some remarks on the same subject. (See page 844.)

DR. EDMUND ANDREWS: I have been so much perplexed by this class of cases that I would a good deal rather ask questions than attempt to enlighten anybody. I was induced to come here to-night, partly, because I am threatened to be called as a witness in a railroad suit. I have not examined the patient, but it is said to be an injury of the spine, and it struck me that this discussion would enlighten me.

DR. L. L. McARTHUR: There are some facts that will bear reiteration and emphasis in this connection; and to begin the subject one might follow Ashurst, who says it is mortifying to confess that the physicians and surgeons of the present day know less in regard to concussions of the spine than their predecessors did. But he enlightens us a little further by stating that we know perhaps a little more what it is not. The improvements which have been made in the line of nervous diseases, and the advance in the pathology of the spinal cord, have enabled the neurologists to clear up many of the nervous diseases which were classed under the head of spinal concussion. Spinal concussion can be limited to

concussion of the brain, and yet, in concussion of the brain we always expect the symptoms to manifest themselves at or very soon after the injury. But in this class of cases which come under the head of spinal concussion—identically similar in their nature, that is, believed to be without any actual structural lesion of the spinal cord, they are claimed to occur weeks or months afterward. Hence, I feel inclined to ask the gentleman who closes the discussion if we have any symptoms which we may rely on as confirming, or being diagnostic of, spinal concussion? If they can in any way enlighten us as to our diagnosis for other troubles of the spinal cord, or if the neurologist has some means at arriving at a conclusion, some characteristic symptoms like vertigo, the peculiar gait of locomotor ataxia, where the gray matter of the cord is affected. There seems to be nothing definite conveyed by the term spinal concussion. Some other name has been suggested, rather than this term which covers up ignorance, and probably *comotio-cerebri* might be applied, rather than that of concussion. We know that concussion of the spine is not shock. Moreover, as advances are made in medicine the list of functional diseases are disappearing. Formerly, it was satisfactory to make a diagnosis of a person being paralyzed, but the term paralysis is obsolete, and so the functional diseases are, as advances are made, disappearing. We cannot expect to have changes take place of a physiological or pathological nature without some textural change; I mean if these changes persist, are constantly making themselves evident; they cannot last four weeks. Temporarily, we might have a functional derangement of the cord in which some symptoms were manifested, but as for weeks, months and years, as in the case of Dr. Phillips, it is unreasonable, in the light of our pathological literature, to expect without some structural changes. A significant fact in regard to concussion of the spine is that such a large proportion of the cases are in connection with some suit for damages, especially those which are obscure.

DR. J. G. KIERNAN: I did not hear the paper, and am not therefore very well prepared to discuss it. With regard to one point raised by Dr. McArthur I shall have to take issue; first, as to the textural question. It seems to me perfectly possible that for a long time there may be very marked symptoms without textural lesions. Cases have been under observation in which no lesion was found, and yet in which the symptoms were well marked. I was much pleased to hear Dr. Lyman refer to the fact that many cases could be considered rather as cerebral than spinal cases. The fact is lost sight of, that when the patient recovers from cerebral concussion he passes out of the surgeon's hands. When I was connected with the institution on Ward's Island,

I remember distinctly, four recoveries from cerebral concussion that died in two or three years, under my charge in the insane hospital; they did not recover from cerebral concussion. I think if cerebral concussion was as frequently made a matter of litigation, and as frequently examined as spinal concussion a great many more cases might be developed. A large number of the recoveries drift into the insane and poor hospitals and die there.

In regard to the point raised by Dr. Lyman, particularly with respect to the cases classified as mental disorder: The fact that many of these make good recoveries, is signally shown in a case of Page's that I have always been suspicious of. Page relates the case of a woman which he decided, after careful examination, was one entitled to pretty heavy damage; she was incurable, and yet she recovered, married, had children, and lived a happy life thereafter. But, unfortunately, very often those cases do not have such a fortunate outcome. Dr. McIlvaine, at a meeting of railway surgeons, reported a case in which a woman rallied from the effects of an accident, and he believed her to be a malingerer; but finally the woman began to evince all the symptoms of advanced myelitis, and the doctor was persuaded that her disease had started at the accident to which she traced it.

With regard to mental disturbances always being evidence of direct cerebral trouble, the question is certainly one which is open to doubt. We all know who have had experience with locomotor ataxia, that there are very marked mental disturbances which occur in consequence of that disorder; they occur in typical cases, and if they can occur from a spinal disorder of that kind, why not from the condition known as spinal concussion. That there is a great difficulty in diagnosis is shown by the elevated railroad case in Brooklyn. It was a case in which a man pushed a woman down stairs. The question as to whether the case was one of spinal concussion or of hysteria was debated, and evidence given on both sides by very eminent neurologists; I think on the side of the concussion were Drs. Hammond and Spitzka, and that eminent railway expert, James J. Johnson, who has written more on the subject of spinal concussion than any other person. On the other side were Landon Carter Gray and Stein. In that case the hysterical symptoms were well marked, and yet there was some spinal disorder, as the woman died with decided myelitic symptoms.

DR. C. E. WEBSTER: I think the point Dr. Lyman advanced is one of a great deal of interest; that is, that in these cases of spinal concussion there may be a fundamental change in the nervous system of the individual, so that after the concussion or accident takes place the fundamental trend or principle of his organization may

be changed; he may be a different individual.

DR. CLARK GAPIN: On the very threshold of the subject we find this difficulty, that it is in a more or less chaotic state, and any discussion of it at present must be desultory, a sort of patchwork discussion. A few years ago we thought we were pretty well grounded, and those of us who read Erichsen at that time without any very critical feeling, accepted what he had to say, and passed it by as a subject which a master mind had solved apparently for all time to come; but a more critical investigation of Erichsen's work shows that it is a master of expression rather than a masterly statement of fact. I think Erichsen's work may be criticised in the very name which he gives to the injury; he calls it concussion of the spine. Now if any one were to approach Erichsen with that very array of symptoms relating to the brain, he would never think of calling it concussion of the brain. Concussion of the brain we are accustomed to associate with positive physical and mental manifestations, and symptoms developed at the time or immediately following the injury. In his concussion of the spine there are no such symptoms, the symptoms may manifest themselves weeks, months or even years afterwards, and he is willing to accept them as evidence of this concussion. I think not only do the symptoms not bear out the name which he has applied, but there is a very different anatomical condition. The brain is penned up in a bony covering that is very close to the brain tissue; whereas the spinal cord floats loosely in a bony casing surrounded by a fluid, and at all points it is considerably distant from its bony surrounding, hence, the greater difficulty of any concussion occurring there.

With regard to the cases that have been presented, I think that those cases in which there is a positive physical injury to the spinal cord are very rarely passed by; there is very rarely any difficulty that I have noticed. In my observation there is no dispute among surgeons where the spinal cord is injured; we know the symptoms of even a blood clot on the spinal cord is very pronounced, and they are unquestionable; yet we are asked to believe that a great injury has been sustained by the cord where there are none of these, even transient symptoms. Some time ago I had a case in which it became my duty to investigate Erichsen's cases closely. I took all the cases and arranged them under three heads: the objective symptoms, the subjective symptoms, and those which could be maligned. If you ever go through that experience you will find how comparatively few the cases are which Erichsen gives as proof of concussion of the spine.

I agree with Dr. Lyman's statement of his arrangement and classification of these injuries,

that where these symptoms follow a considerable time afterward, or where they are of a functional nature, that is to say, where there are symptoms that are elusive in their character, which you cannot grasp, they are mental in their quality, and in some cases they may all result from the injury.

Sometimes I think, from the tremendous shock of a railroad accident, this disarrangement may occur, and the individual be a sufferer for his whole lifetime, but such cases are extremely rare and generally marked by present symptoms. The other class of cases are those which arise afterwards, and heredity has a great deal to do with these cases; we find some of them are individuals who have inherited imperfect nervous organizations; we find others who have, by dissipation, brought themselves into that condition, and when they come to sue a railroad company, no matter what their past life has been, what the heredity has been, it is the fault of the railroad company.

DR. E. W. ANDREWS: All authorities, including Erichsen, himself, positively assures us that spinal injuries received in railroad accidents are in no essential way different from those received in any other manner. Cases have been cited running back centuries in medical history of exactly this injury which Erichsen describes as railway spine. In this paper we have not attempted to discuss the pathology; this is well mapped out by pathologists of note. While it is true, as Dr. Lyman states, that these cases sooner or later cease to be surgical, yet the pathology of injuries is not essentially different; that we know from the pathology of disease. In at least one disease, locomotor ataxia, there seems to be very positive testimony that injury may be the exciting, even the predisposing cause. Leyden has asserted this. Pitt is strongly of the opinion that locomotor ataxia may be produced directly by injury, and more especially he insists that a case of locomotor ataxia may, as a result of railway injury, be produced. Of course if this be the case, if a disease of the spinal tract may be produced by injury, it would be supposed that other diseases might be produced by traumatism, but necessarily an understanding of the minute pathology of the cord, and especially the microscopic appearance of the tract, would be indispensable to one who would give testimony in a court of justice in cases involving important injuries. Within a short time, to my knowledge, one expert has been trapped in this manner in an important case. A prominent railway surgeon, an expert, went on the witness stand and, with what seems like temerity, acknowledged, in testifying in relation to a case of so-called railway spine, that he was unacquainted with the work of Page. Well-meaning surgeons who are willing at the present day to go into a court of justice and give the pathological

views of Erichsen, I think are liable to be sadly caught up.

In place of such terms as spinal concussion it is perhaps better to use definite descriptive compounds; intra-spinal hemorrhage can undoubtedly be applied to a large number of spinal symptoms; laceration of the ligaments can also be used. Around the spinal cord there are a set of veins that can scarcely be lacerated without producing rupture, and hæmorrhages may occur upon the membranes or in the substance of the cord. Traumatic myelitis is undoubtedly a condition which at certain levels of the cord, can exist. Gower speaks of cases of traumatic myelitis in which a post-mortem has revealed all the conditions produced in operation from thickening of the membrane there. Some slight injury to the bones is another condition. And so we may classify the actual state of the cord, and in a very large number of cases specify accurately the lesion. As to pure concussion, it may be defined as a stunted condition of the cord, which is inferred to have undergone some form of molecular derangement by which its function is for the time being stunted. Cases are probably on record in which post-mortems, after spinal injury, have failed to reveal any lesion whatever in the tissue. I question, however, whether such cases have been subjected to complete and minute microscopical examination such as is at present considered essential. Lidell has related a case in which a post-mortem examination was held on a patient who had died, as was supposed, from concussion of the cord. At first no sign revealed itself in the appearance of the cord, and yet a more careful subsequent examination showed in the interior of the cord itself a globular clot which had produced compression and death. The question of Dr. McArthur, "Does Concussion Exist?" it is perhaps impossible to answer. My present impression is that transiently it may.

I will close by saying that Sir Joseph Bryant, as good surgical authority as we have to-day, has recently written and published a paper in which he claims that concussion of the brain has no existence as a pathological state. Hilton many years ago denied that any case of death from concussion of the brain had been examined which failed to reveal structural changes in the gross appearance. The tendency of the present time is to more and more careful examination of these traumatic troubles of the brain and cord. Much of the symptomatology of concussion is inferential, but from the investigations that are being carried on we will undoubtedly be able to define a structural condition corresponding to every symptom which injuries produce.

Philadelphia County Medical Society.

*Stated Meeting, October 10, 1888.*THE PRESIDENT, J. SOLIS-COHEN, M.D.,
IN THE CHAIR.

DR. G. E. DESCHWEINITZ presented the following paper on

ACUTE UNILATERAL OPTIC NEURITIS, WITH THE
REPORT OF A CASE.

Cases of sudden failure of sight in one eye with little or no ophthalmoscopic changes are occasionally encountered, in which the attack is attributed to exposure to cold. Sometimes in these instances congestion of the optic disk is present, and a retro-ocular neuritis has taken place. Other cases of acute optic neuritis, sometimes monocular, sometimes double, are on record. Thus Max Haadel¹ observed nine cases, some single and some double, with and without defects in the field of vision, usually with serious disturbance of sight, mostly with pronounced inflammation of the papilla and neighboring retina, in which exposure to a draught of air was the imputed cause. Periostitis at the foramen opticum was doubtful, and the absence of syphilis, sugar and albumen, lead and other poisons was assured in every case. In M. Schlüter's² statistics, among thirty-eight cases of neuritis and neuro-retinitis, seven are classed as primary, while the remainder are arranged as follows: thirteen of central origin, six from specific causes, four followed as the result of pathological orbital processes, two from abuse of alcohol and tobacco, two from albumen, and one each in connection with the puerperal state, after injury, from acute myelitis, and from hereditary reasons. E. Schmidt,³ in an examination of the cases of optic neuritis in the clinic of Prof. Hirschmann, at Charkow, found, among 120 cases in which the etiology was recorded with some degree of exactness, two instances of papillitis or papillo-retinitis due to cold. Voissius⁴ has recorded a case of monocular optic neuritis in a man aged 61, the attack coming on as the result of catching cold during a long wet drive. Recovery, with a hemiopic defect in the field of vision, was the outcome of the disorder. Roi⁵ reports some examples of optic neuritis which he looked upon as rheumatic. They appeared monocular, were accompanied by a speedy diminution of visual acuity passing into amaurosis, but not, however, to the exclusion of a return to normal sharpness of sight. H. F. Hansell⁶ describes two instances

of acute optic neuritis of rheumatic origin, one monocular in a healthy married woman, and the other double in a man aged 31. In each there was sudden loss of vision, swollen optic disks, and under treatment a rapid return to normal visual acuity. In Dr. Hansell's paper references to analogous cases are recorded, and L. W. Fox⁷ has recorded an instance of acute monocular optic neuritis. Recently R. H. Derby⁸ has reported a case of uniocular neuro-retinitis in a girl whose father had had syphilis, but who had no other manifestation of constitutional taint. There was at first a central scotoma, then optic neuritis. Light perception was lost, but under mercurial inunctions and iodide of potash the swelling of the disk, which had amounted to 7 D., subsided, and fair vision was recovered. Cases of optic neuritis without evident cause are occasionally recorded, as one by Power.⁹ The patient was an anæmic lad of 17; the neuritis was double; albumen and syphilis were absent; the lad had had two attacks of rheumatism and his father was gouty. Friedenwald¹⁰ describes an instance of right optic neuritis in an otherwise healthy girl of 14, preceded by violent headache and other symptoms indicating grave cerebral disturbance, but in which perfect recovery followed. He classed her case with these examples of optic neuritis, referred to by Juler, occasionally met with in young girls, the cause assigned being some menstrual disturbance, the presence of which, however, careful inquiry often fails to elicit. Usually the neuritis is preceded by severe headache and the prognosis is unfavorable. No further reference to the many cases of neuro-retinitis described in connection with irregularities of the menstrual functions need be made. Hirschberg¹¹ has seen several instances of primary optic neuritis, whose course is very typical. The disease is divided into three stages: the first, characterized by great visual disturbance, with slight ophthalmoscopic appearances; the second, by diminution of the visual disturbance and very marked inflammation of the disk; and the third, usually by almost complete recovery with pallor of the disk. The cases mostly occur in women, but are not connected with derangement of the sexual functions. Partaking somewhat of the nature of such cases, but not without a history of exposure as the exciting cause, is the subject of this communication.

Mrs. W., æt. 40, consulted me on July 11, 1888, because for a week past she had suffered from neuralgic pains in and above the eyes, most marked upon the right side. Bright light was distressing, and pain followed when the eyes were rolled upward; slight tenderness was ap-

¹Max Haadel, Inaug Diss, Berlin, 1885 Abst Centralbl f Prakt Augenheilk, p 223, 1885

²Schlüter, Inaug Diss, Berlin, 1881 Abst Nagel's Jahresbericht, xii Jahrgang, p 305

³Schmidt, Wjestnik Ophth, 1885, p 273 Archives of Ophthalmology, vol xv, p 249

⁴Voissius, Klin Monatsbl f Augenheilk, xvi, p 298

⁵Roi, De la névrite optique humatisme, Paris, 1886

⁶H F Hansell, Med News, Aug 7, 1886

⁷L W Fox, Amer Journ Ophthalmology, July, 1884

⁸Amer Oph Med Soc, 1888 N Y Med Journ, Oct 6, 1888

⁹Power, Trans Oph Soc U King, vi, pp 361-368, 1886

¹⁰A Friedenwald N Y Med Journal, Feb 5 1887

¹¹Hirschberg, Centralbl. für Prakt Augenheilk., Nov., 1887

parent when pressure was made upon the right globe. The amplitude of accommodation was 3.5 D., and there was high insufficiency of the internal recti, so that a divergent squint was evident when the eyes attempted to fix a point 15 cm. distant. The fundus of each revealed no gross lesions, save a slight retinal haze around the upper and lower edges of the right disk, the deeper layers of which were gray. The maculas were normal, and the refraction appeared to be a simple hypermetropia of 1.5 D. In the absence of any general derangement the peri-orbital pain was attributed to eye-strain, and atropia drops were ordered for the purpose of measuring the refraction error. The correcting glass proved to be + 1.5 s. and with it normal vision was acquired. During the application of the atropia the neuralgia disappeared. The drops were discontinued and the patient directed to return in two weeks. During the measurement of the refractive error, the patient, on several occasions stated that although she saw the same number of letters with the right eye that she did with the left, she failed to see them with the same distinctness; but no changes at this time were present in the fundus. This indistinctness gradually assumed the appearance of a definite, dark area in the field of vision, the peri-orbital pain returned, and five days after the last ophthalmoscopic examination had failed to discover any changes in the disk or retina, she returned with the vision sunken to ability to count fingers and well-marked right-sided optic neuritis. All edges of the disk were woolly and its upper margins entirely hidden, while a flame-shaped hæmorrhage was situated above and to the inner side. The apex of the swelling was + 3. D., the vessels were about normal in size, and the macula free from disease. The pupil was of medium size and acted sluggishly to light and shade. A few days before this time she had gone on an excursion with her children, became much overheated, and had afterward waded about in a neighboring brook. It was in the evening of this day that the neuralgia returned, the definite dark area appeared in the field of vision, and shooting pains attacked the deep muscles of the thighs. Further examination proved an entire absence of any symptoms pointing to brain disorder; the heart and lungs were normal, and the patient was not anæmic, there had been no suppression of the menstrual flow and this function was natural, no active uterine disease existed, except a slight prolapsus which was not then under treatment. The urine was free from albumen, sugar, and tube casts, and the last recent illness, several years before, had been an attack of peritonitis from which a good recovery had resulted.

Dr. James Tyson, who saw the case in consultation, confirmed the accuracy of these examinations. Syphilitic infection and the action of lead

or other poisons were carefully excluded. The vision continued to sink, and on the following day was reduced to faint quantitative light-perception and the disk, if anything, was slightly more swollen. The temple was freely leeches and the patient directed to take fifteen grains salicylate of sodium before each meal, and seven and a-half grains of iodide of potash, with one-twenty-fourth of a grain of bichloride of mercury after each meal. Three days later, or on July 30th, the vision was slightly improved to the ability to see the hand move and the pain was distinctly better. The medicine was continued and small fly blisters ordered placed upon the temple. August 1st, the salicylate of sodium was discontinued, but the other medications continued, vision improved and large letters (Sn·CC) were faintly recognized.

August 6th, marked improvement, $V. = \frac{5}{xxxv}$; edges of the disk visible all around and only a faint remnant of the hæmorrhage. August 20th, neuritis had practically subsided; $V. = \frac{5}{x}$, form and color fields normal in extent; no scotomata; ordered one-twenty-fourth of bichloride of mercury after each meal. September 9th, disk pallid, and all traces of the neuritis had disappeared.

In the absence of any symptoms pointing to cerebral disturbance, with no uterine disease save a slight prolapsus and the history of a leucorrhœa no longer active; with the menstrual functions normal; with a healthy circulatory apparatus and the urine free from albumen, sugar, and tube casts, and with the direct account of overheating and exposure, we may fairly conclude that this was an instance of genuine, acute optic neuritis. The history shows that before any ophthalmoscopic changes were evident, and before there was any positive diminution in visual acuity, the field of vision was invested with a haze which afterward assumed a definite, dark form, probably coincident with the first appearance of the inflammation around the papilla and the loss of sight. Hence it is evident that the attack was in process of formation and was precipitated by the wetting of the feet and sudden cooling after an overheating. Cases of optic neuritis apparently due to exposure, as has been pointed out by Leber and others, are mostly monocular; and rheumatism, perhaps upon insufficient evidence, has been cited as the cause. Gowers,¹² writing upon this point, says: "Neuro-retinitis has been loosely ascribed to rheumatism, but only on the ground that it has sometimes appeared to be due to cold." Rheumatic inflammation at the back of the orbit, however, according to the same author, may damage the optic nerve. Michel,¹³ commenting upon a reported case of acute, peripheral retro-bulbar neuritis, remarks that he has never observed a

¹² Medical Ophthalmoscopy, 2d ed. p. 230.

¹³ Nagel's Jahresbericht, xvii, Jahrgang, p. 381.

"rheumatic" neuritis and considers the assertion of such as a mark of ignorance of the causes especially operative in the production of inflammation of the optic nerve.

Hansell (*loc. cit.*) thinks "that a true rheumatic inflammation of the fibrous coat of the nerve between the optic foramen and the sclerotic" quite possible, but owing to the infrequent opportunity for section and examination admits that "our pathology is, at best, speculative." The central scotoma which existed in this and similar cases denotes an affection of the sheath of the nerve extending into its substance, not as Hirschberg remarks, as would have been supposed before the macular fibres were discovered, a central inflammation extending outward. The prognosis depends to a certain extent upon the site of the lesion and the termination may be favorable, as in the case reported, or a permanent atrophy of the disk may result. Hirschberg (*loc. cit.*), in his cases of primary optic neuritis, has found usually that the second eye is attacked; the interval may be days, or weeks, or months. Three of his cases illustrate this fact. A woman, aged 42, suddenly lost the sight of the right eye; in six days from the beginning of the attack this was well, but the left eye was attacked and optic neuritis developed; in three weeks recovery had taken place and the fundi were normal. In a second case a woman, aged 20, had slight temporary loss of vision in the right eye three weeks before coming under observation for loss of vision in the left, which came on eight days before. Four months later she came with the right eye similarly affected, while the left had practically recovered. A third instance was that of a peasant girl, aged 17, who had her right eye attacked in 1878, recovered, and in 1884 had her left eye attacked, which also recovered. The treatment has already been discussed. Leeching of the temple, followed by blisters, diaphoresis, together with the salicylates and iodide of potash, yield the best results. Improvement may take place before the remedies have time to take effect.

DR. RANDALL: I can add nothing to Dr. de Schweinitz's admirable presentation of the subject; but would like to reiterate the importance of early recognition and prompt treatment of such cases. I feel very sure that the issue depends very largely upon whether early alterative treatment is instituted, since upon the limitation and prompt removal of the exudation in the nerve and retina depends the possibility of a return to the normal with preservation of the sight.

DR. JAMES K. YOUNG exhibited the

MORTON OPHTHALMOSCOPE.

The Morton ophthalmoscope presents some new features which may be of interest to some of the members of this Society. It is made by Pickard & Curry, London, and as an instrument is well

balanced, fits the eye well, and as a piece of mechanism is perfection itself. It is a modification of the Gower's ophthalmoscope, as are all modern English instruments, but in the position and movement of the lenses differs from this and all others. The Rekoss disk is there replaced by an elliptical trough containing the lenses. These are simply confined in the channel, are unattached to each other, and are moved by a wheel below, and pass around a wheel above. In this respect it resembles the Couper instrument, in which the lenses are attached to one another as an endless chain, but is an improvement in the right direction. It has, in all, thirty-three lenses. In the trough are eighteen concave lenses from -0.5 to 30 D. Eleven convex lenses from $+0.5$ to 12 D., and on the disk has four additional lenses, a -10 D. and -50 D., and a $+0.5$ and $+20$ D. These admit of as many combinations as any instrument I am familiar with. It has three mirrors, a small concave mirror of about 6 cm. focal length, fastened to a collar, a large concave mirror of about 29 cm. focal length, and a plane one. These are all attached, and the apertures come readily over the sight hole. It has below the index dial a pupillometer, which adds to the usefulness of the instrument. It fits accurately into a rosewood case, and has a convex lens for indirect method.

DR. RANDALL: I feel that a discussion of minutiae as to the ophthalmoscope is hardly in place; but as to the point emphasized, that the instrument contains a concave lens of fifty dioptries, I must confess my scepticism as to its value. Cooper put a concave 72 D. in his instrument and told me that he was self-condemned as an ophthalmoscopist in having nothing stronger than 24 D.; yet when asked if he ever had use for the strong lens, admitted that a case calling for it was seen but once or twice a year. Even should one of the very rare cases of high myopia be met, the eye-ground would be better seen (if at all visible in the upright image) by placing a strong concave lens close in front of the examined eye.

DOMESTIC CORRESPONDENCE.

The Medical College of Virginia.

Dear Sir:—There has appeared in *THE JOURNAL* several articles reflecting upon the Medical College of Virginia, which are so flagrantly at variance with the truth, that the Faculty feel called upon to make the following statement of the facts, which the writer in *THE JOURNAL* has distorted in many ways. It is only in deference to the official position of *THE JOURNAL* as the accredited organ of the Medical Association that it is deemed necessary to notice these attacks, for the individual opinions of the author are simply a matter of indifference to the Faculty, being palpa-

bly the reflex of an inimical partizanship in this city.

Briefly put, the Medical College of Virginia is charged by its enemies:

1. With being hostile to the principles of the higher standard of medical education than at present obtained in the examinations of the colleges.

2. With being opposed to the establishment of a State Medical Board in pursuance of that object.

3. That it attempted, through its students, at the last session of the Legislature to amend the law, so far as to substitute for it the proposition to exempt Virginia students from its operations.

In denial of these assertions it is well known that the Medical College was one of the prime movers in getting the law passed by the Legislature, and, but for the zealous personal exertions of the members of the Faculty, that it would have failed to be enacted. After an experience of two years, it was found to be so very imperfect in many of its features that the Medical Society of Virginia and the Examining Board came before the Legislature asking that it be amended; the Board wishing to have the feature permitting an applicant to appear before any three members individually, instead of the entire Board, abolished; and the Society asking that the number of members of the Board be reduced from thirty to twelve, and that a diploma should be a preliminary qualification.

The students at the time the amendments were before the Legislature were incensed at the action of the Board at its last session when applicants from this College were rejected on account of what they believed was personal hostility of three of the members to the Faculty, and fearing that in future examinations the students of this College would be vicarious sufferers for such animosity, petitioned the Legislature to exempt the graduates of the two State institutions from the operation of the law.

A committee of the students waited upon the Dean and requested the co-operation of the Faculty in their movement, but were plainly and positively told that the College was committed to, and believed in the principles of the law, and therefore could not aid them in their attempt to abolish it or to get its students exempted from its operations. The Faculty, however, at the same time, claimed the same liberty of opinion in discussing the proposed amendments that were being offered, as other members of the profession, and did not concede that an objection to two or three members of the Board implied any hostility to the wish "to elevate the standard of medical education." To emphasize this fact, the Dean was instructed to appear before the Legislature and re-affirm the wish of the Faculty that the law, imperfect and unsatisfactory as it was, should remain in its original form rather than encounter

the risk of defeat in contentions over the amendments. Had it been the wish of the Faculty to oppose the passage of the bill, it will not be denied that there would have been any difficulty in defeating it, as a large number of legislators deferred to its wishes in the matter.

The writer in *THE JOURNAL*, persists in placing the Medical College of Virginia in a false attitude in stating that the percentage of its graduates before the Examining Board was so small as to establish its meagre teaching qualifications in comparison with other institutions in the country, whilst the facts are, as the following report of the Examining Board will show, that it had the smallest number of graduates rejected of any other college whose number of applicants were equal to it.

RESULT OF WORK DONE BY MEDICAL EXAMINING BOARD OF VIRGINIA.

INSTITUTIONS REPRESENTED BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA. (From Jan. 1, 1885, through October 9, 1888.)	Total No. of Appli- cants from each.	Rejections, Total from each.	Certificates issued by Med. Ex. Board of Va.	No. Rejections making Second Applications	Second Rejections.	Certificate Issued on Second Application.	Incomplete Examin- g by withdrawal, &c.
Medical College of Virginia	57	8	48	3	3	1	
University of Virginia, Med. Dep't .	33	1	32	1	1		
College of Physicians and Surgeons, Baltimore, Md.	34	10	24	6	2	4	
Univ. of Maryland, Med. Dep't, Bal- timore, Md.	34	9	25	3	1	2	
Jefferson Med. Col., Philadelphia, Pa.	12	3	9	2	2		
Univ. of Penn'a, Philadelphia, Pa. .	3	2	2	1	1		
Bellevue Hosp. Med. Col., New York.	6	1	5	1	1		
Univ. of City of New York, Med. Dep.	7	2	5	1	1		
Col. of Physicians and Surgeons, N.Y.	3	3	3	1	1		
Louisville Medical College, Ky. . . .	2	1	1	1	1		
Hosp. Med. College, Louisville, Ky. .	3	3	3	1	1		
Kentucky School of Med., Louisville	2	2	2	1	1		
University of Louisville, Ky.	1	1	1	1	1		
Med. Dep't of University of Tennes- see, Nashville.	1	1	1	1	1		
Vanderbilt Univ., Med. Dep't, Tenn.	3	1	2	1	1		
Detroit Med. College, Mich.	2	1	1	1	1		
Univ. of Michigan, Ann Arbor, Mich.	1	1	1	1	1		
St. Louis Medical College, Mo.	1	1	1	1	1		
Columbus Medical College, Ohio. . .	3	2	1	1	1		
Cincinnati Medical College, Ohio . .	1	1	1	1	1		
Med. Dep't Howard University, Wash- ington, D. C.	7	6	1	4	4		
Leonard Med. Col., Raleigh, N. C. .	3	1	2	1	1		
Med. Dep't University of Georgetown, D. C.	1	1	1	1	1		
Hahnemann Homoeopathic Medical College, Philadelphia.	2	2	2	2	2		
Medico-Chir. Col., Philadelphia, Pa. .	3	3	1	2	2		
Geneva Medical College, New York .	1	1	1	1	1		
Heidelberg, Germany	1	1	1	1	1		
Baltimore Medical College, Md. . . .	1	1	1	1	1		
Colleges Unknown.	4	3	3	1	1		
Non-Graduates.	11	4	5	1	1		
Cleveland Homoeopathic Hosp. Col- lege, Ohio.	1	1	1	1	1		
Total number of Examinations .	240	54	181	25	10	15	5

Number of Applicants examined by Individual Examiners out of Session. 117
Number of Applicants examined by Board in Session. 123
N.B.—The first and second columns add up 243 and 181 respectively; but three of the applicants each gave two Colleges of graduation.

It will be seen from the above table that 57 students of this College were examined by the Board, and about 7 per cent. were rejected, but that of the rejected three were reexamined five months after-

wards and were given their licenses. The statistics regarding the students from Baltimore, Philadelphia and New York show a rejection of 25 to 30 per cent.

At the examinations in April last the State Medical Examining Board gave certificates to practice medicine to three of the students of this College whom the Faculty the week previous had rejected for not reaching the standard required by it.

We shall pass by in silence the prophecies of the writer in *THE JOURNAL* that the Faculty of the College intended going to Norfolk for the purpose of attacking the Medical Board and preventing its renomination, considering it necessary only to refer its readers to an accurate report of the meeting, where Dr. Cullen, the Dean of the Faculty, seconded the resolution of Dr. Chancellor for the reappointment of the entire Board, and embraced that opportunity of refuting the misrepresentations in regard to the action of the College, which was received by the Society with great gratification and satisfaction. Dr. Cullen, in substance, stated to the Society what is written here, and added that not only was the Medical College of Virginia in accord with the examining law of the State, but that it would go further than it does and join the Medical Society of Virginia in petitioning the Legislature to compel the two State institutions to have preliminary examinations and a three years' graded course. I am very respectfully yours,

J. S. DORSEY CULLEN,

Dean of the Faculty, Medical College of Virginia.

MISCELLANEOUS.

TYPHOID FEVER seems to have taken possession of Providence, R. I. From September 1 to December 5 more cases were reported than since the epidemic of 1882, which followed a very heavy rainfall, but the rainfall for the past three months breaks the weather record, and in this connection it is significant that typhoid is increasing very rapidly. From December 1 to December 5, 37 new cases were reported. It seems that the warning of Health Officer Chapin has not been heeded. In his last report he says: "The Board of Public Works reports that they have during the year succeeded in removing all the privies from the banks of the Pawtuxet River. There are, however, certain places where drainage may at times get into the river, or where it may be washed in during freshets. The bleacheries, dye works and wool scouring works still discharge their effluent into the river. It also happens that occasionally dead animals, slops, night-soil and other offensive matters are thrown in. Much of this pollution can be prevented by a continued inspection of the banks of the stream, and I am glad to be able to report that the Board of Public Works have detailed a man for this purpose. Still, it cannot be hoped that every source of pollution can be permanently removed from a river flowing in such a thickly settled region, and through so many manufacturing villages as does the Pawtuxet. The danger of pollution, either accidental or intentional, will always be considerable, and we must remember that in epidemics of typhoid fever in other cities and towns, a single case of the disease, on the banks of the stream

which serves as the water supply, and that, too, far above the intake, has been clearly proved to be the cause of the outbreak. Such being the case, we cannot afford to run any risks, and if the improved methods of precipitation and filtration which have been recently brought into use are what is claimed for them, it would be highly advantageous if they could be adopted here. As in addition to removing disease germs, such methods render the water clear and free from sediment, their adoption would be most acceptable to our people. The subject is one that should receive careful and immediate investigation. While it may be possible to filter the water on a large scale before it enters the mains, the use of domestic filters on the house taps is not only useless, but dangerous, and has been discouraged by this Department on all occasions." Dr. Chapin said that the importance of thoroughly boiling Pawtuxet water before taking it into the system could not be too strongly emphasized. While boiling may not improve the taste of the water, it will generally kill the germs of disease it contains.

EXPOSURE OF A QUACK.—Aaron Geismar, alias Dr. Geismardo, alias Professor Albert Le Grand, alias Professor Ernest De Blanc, who is known in Chicago, has come to grief in New York at the hands of Miss Nellie Bly, a newspaper writer. He had announced in a flaming advertisement as follows:

PROF. ERNEST DE BLANC,
the Famous Chevalier Electrician of Paris,
will exhibit HIS SKILL AND TREAT THE AFFLICTED FREE on the stage
IN VIEW OF THE AUDIENCE.

Nellie Bly visited his house and discovered that his electric apparatus consisted of a battery in a back hall of his house, and a nickel-plated spring at the door by which he turned the electricity off and on. By means of wires (concealed by a rug) in the floor, he would apparently act as a living battery upon his patients. This discovery led to the disclosure of his life of fraud. He started out in Portland, Ore., several years ago, as Dr. Geismardo. While there he assaulted one of his women patients and was imprisoned. Next he appeared in San Jose, Cal., where he made a sudden departure with money advanced for treatments which he never gave. He turned up at Toledo soon after and announced his lectures and treatment, but did not put in an appearance at the hall. In July last he was billed in Buffalo as Professor Albert Le Grand. On that occasion the *Chicago Herald's* Buffalo correspondent telegraphed the following:

Dr. Edward Storck, chairman of the Erie County Medical Censors, to-day gave "Professor" Albert Le Grand notice to leave town or be arrested for practicing without a diploma. Le Grand gave free lectures in Music Hall, and claimed to cure the lame, halt and blind in Biblical fashion. Dr. Storck said: "Professor Le Grand has decided to leave the city within twenty-four hours. He admitted to me that he had no diploma, and that he was no physician, but a healer. When I asked him if he did not take fees he said that he did. Then, after a good deal of bluster, he gave in. I have learned some of his history. He was a Dr. Geismardo in Portland, Ore., and claimed to be a member of the Society of Sciences of Paris. He also exhibited a decoration, which he claimed to be a cross of the Legion of Honor. He left that city under a cloud. He then turned up in Denver, St. Louis, Kansas City, Baltimore and Boston. He was also arrested in Milwaukee. The society could prosecute him here if it wished to, but if he leaves the city that will be enough. Le Grand speaks French fluently, and owned up to me that his magnetic touch was caused by an electric belt concealed in the palm of his hand. He had three or four dummies traveling with him who came upon the platform and were cured by him.

In July the "doctor" made his appearance in New Orleans. He spent considerable money in advertising, hotel expenses, and theatre rent, but had to leave the city

before getting any returns on account of previous swindlings in that city. Finally he went to New York, and there his whole record has been made public.

HEALTH IN MICHIGAN.—For the month of November, 1888, compared with the preceding month, the reports indicate that tonsillitis increased, and that typho-malarial fever, diarrhoea, dysentery, cholera morbus, and cholera infantum decreased in prevalence.

Compared with the preceding month the temperature for the month of November, 1888, was lower, the relative humidity was more, the absolute humidity and the day and night ozone were less.

Compared with the average of the month of November, in the nine years, 1879-87, diphtheria, intermittent fever, consumption of the lungs, typhoid fever, pneumonia typho-malarial fever, whooping-cough, and remittent fever were less prevalent in November, 1888.

For the month of November, 1888, compared with the average for corresponding months in the nine years, 1879-1887, the temperature was slightly higher, the absolute humidity was slightly more, the relative humidity about the same, and the day and the night ozone were much less.

Including reports by regular observers and others, diphtheria was reported present in Michigan in the month of November, 1888, at twenty-six places, scarlet fever at forty-one places, typhoid fever at twenty-three places, measles at six places and small-pox at seven places.

Reports from all sources show diphtheria at ten places less, scarlet fever at nine places more, typhoid fever at twenty places less, measles at one place less, and small-pox in seven places more in the month of November, 1888, than in the preceding month.

YELLOW FEVER IN CUBA.—A Washington physician who is well informed upon West Indian affairs, says an Eastern paper, makes the surprising statement that the native Cubans do not desire to stamp out yellow fever. They suffer but little from it themselves, and are glad to have it kill about 1,000 Spanish soldiers every year. If this is true it is a shocking example of the possible results of race and national prejudice. Cuba is the fever's winter home, and from there every summer it begins a raid upon our Southern cities. It may yet become necessary to annex the island to the United States in order to have it put under proper sanitary condition. As this does not appear to be practicable at present, the best course now open is to take precautions for keeping the infection out of our country next year. Early in the season a rigid quarantine should be established, and the authorities of all Southern cities liable to visitation should see to it that all filth is removed from the streets before it can harbor and propagate the dreaded disease.

THE PENNSYLVANIA STATE INSANE HOSPITAL.—The Trustees of the State Hospital for the Insane at Norristown held their regular monthly meeting on Dec. 8. Dr. Chase reported 848 patients in the male department at the end of November, and Dr. Alice Bennett reported 827 patients in the female department. The physicians report the general health of the patients exceptionally good. Dr. Chase recommended that photographs be taken of the patients in order to keep the likenesses with the record in order to distinguish those of the same name, and to be used in case a patient escapes, and the recommendation was voted down. Trustee Stinson remarked, "we want no rogues' gallery here." The report of the Trustees concludes as follows: The Hospital has now a population of 1660 patients and if the natural increase of the insane population of the district is to be provided for it will be necessary to put up an additional ward and supply buildings. The Trustees believe that they can put up these buildings to accommodate 660 patients, 330 of each sex, for about \$400 per bed. They therefore recommend to the Legislature to appropriate \$250,000 for that purpose.

DR. A. F. RITCHIE has resigned the Chair of Anatomy in the Medical Department of the University of Minnesota.

INFLUENZA is reported to be epidemic at Fort Dodge, Iowa, and in its vicinity.

HEAD-CHEESE POISONING is reported at Brush Creek, Iowa, there being about 30 cases, none serious:

A **CODE OF VACCINATION RULES** has been adopted by the Board of Health of Columbus, Ohio, in regard to the pupils and teachers in public schools. A system of house inspection has been adopted, and is being carried into effect.

DR. R. S. SABIN, aged 56, of West Troy, a graduate of the Albany Medical College, died on Dec. 4.

A **NEW HOSPITAL** has been erected at South Bay City, Michigan.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from November 30, 1888, to December 7, 1888.

Major John W. Williams, Surgeon U. S. Army, is hereby relieved from further duty with the battalion of the Second Artillery at Ft. Wadsworth, New York Harbor, and will proceed to join his permanent station, Jackson Bks., La. Par. 3, S. O. 256, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, December 5, 1888.

First Lieut. Robert R. Ball, Asst. Surgeon, leave of absence granted in S. O. 129, Dept. of the Missouri, October 18, 1888, is extended one month. Par. 11, S. O. 279, A. G. O., Washington, November 30, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 8, 1888.

Surgeon J. F. Bransford, detached from Smithsonian Institution and granted six months' leave, with permission to go abroad.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Two Weeks Ending December 8, 1888.

Surgeon G. W. Stoner, when relieved, to proceed to Detroit, Mich., and assume charge of the Service. November 26, 1888. Granted leave of absence for thirty days. November 28, 1888.

P. A. Surgeon D. A. Carmichael, granted leave of absence for thirty days. November 27, 1888. Relieved from duty at Washington, D. C.; ordered to Marine Hospital, Wilmington, N. C. December 3, 1888.

P. A. Surgeon S. C. Devan, detailed as attending Surgeon and acting Chief Clerk Marine Hospital Bureau. December 3, 1888. Granted leave of absence for eight days. December 8, 1888.

P. A. Surgeon F. M. Urquhart, to proceed to Evansville, Ind., for temporary duty. November 30, 1888.

P. A. Surgeon S. D. Brooks, granted leave of absence for thirty days. December 8, 1888.

Asst. Surgeon Seaton Norman, ordered to examination for promotion. November 27, 1888. Granted leave of absence for twenty-five days. December 8, 1888.

Asst. Surgeon J. B. Fattic, ordered to examination for promotion. December 7, 1888.

Asst. Surgeon G. M. Magruder, relieved from special duty at Way Cross, Ga. December 8, 1888.

Asst. Surgeon J. J. Kinyoun, granted leave of absence for ten days. December 8, 1888.

Asst. Surgeon G. T. Vaughan, granted leave of absence for twenty-three days. December 8, 1888.

Asst. Surgeon G. M. Guit  ras, to proceed to Savannah, Ga., for temporary duty. December 3, 1888.

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No. 25.

ADDRESS IN SYPHILOGRAPHY.

SYPHILIS AS A NON-VENEREAL DISEASE.

Address of the Chairman at the first session of the Section on Dermatology and Syphilography, at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May 8, 1888.

BY L. DUNCAN BULKLEY, A.M., M.D.,
OF NEW YORK.

Gentlemen:—It gives me special pleasure to address you on this occasion, marking as it does an epoch in the history of the American Medical Association, which consequently should be regarded as an event of importance in American Medicine. We gather here to-day at the first meeting of the Section on Dermatology and Syphilography, of the American Medical Association, and in a measure to celebrate the recognition of this branch of medicine as a special department by the great representative medical organization of America. It is, therefore, an occasion in which those interested in this department of study and practice should feel a peculiar interest, and should particularly rejoice, for it certainly indicates an advance in medical thought and liberality, a broadening of the field of work of our Association, and, it is to be hoped, a benefit to the profession and community.

I will not occupy your time by tracing the rise of American dermatology, or detailing the elements which have contributed to bring it to its present position, as these topics have been freely handled by abler pens than mine in the Addresses of the Presidents of the American Dermatological Association, nor shall I attempt to present a sketch of the recent progress in this department, as is frequently done in such addresses, for the present current literature and the rapid multiplication of text-books renders these *résumés* less necessary and of less practical value. But I shall shortly direct your attention to a subject which I trust will prove as interesting to you as it has been to me, and which, I hope, may be the means of ultimately effecting some good. The present Section is organized for work, for the practical consideration of topics related to diseases of the skin, and it is hoped that it will contribute greatly to making dermatology a more interesting and

successful field of labor, not only to those particularly engaged in this line of practice, but also to the general practitioner, to whom this branch often presents unusual difficulties.

The title which has been given to this Section is that of Dermatology and Syphilography, in order, no doubt, to directly interest the largest number of persons possible, who might not otherwise consider that syphilis belonged properly to this Section. While there is no practical objection to the name as it now stands, it is in a measure tautological, for syphilis should in reality be no more specially mentioned than any other one of the great diseases which affect the skin, although it is undoubtedly the most important of all, and ranks hardly second to any other disease affecting the human race, both in its clinical and pathological importance. But syphilis belongs naturally to this group of diseases for reasons which are easily seen. Thus:

1. In a very large share of instances the disease gains admission through the skin, or contiguous mucous membrane, and the primary lesion then resulting becomes a sore or ulcer which is diagnosed from other cutaneous ulcerations which may resemble it.

2. Syphilis almost invariably exhibits an eruption on the skin at some period during its existence, and the manifestations of syphilis on the skin are among its most constant symptoms, far more certainly than can be asserted of any other organ or tissue of the body.

3. Syphilis is almost always diagnosticated by means of its cutaneous lesions, indeed it is generally questioned very seriously if the patient has had syphilis if there are no lesions of the skin, past or present, from which to form a diagnosis.

Syphilis has heretofore been regarded principally as a venereal disease, and is found treated of specially in works relating to this subject. But in the light of our present knowledge of the disease and the frequency with which it is communicated innocently, both by contagion and inheritance, we are no longer justified in regarding it solely as an accompaniment of vice, or the scourge of those who have committed sexual errors. In the further development of the subject I will briefly present some of the recorded facts in regard to

SYPHILIS AS A NON-VENEREAL DISEASE.¹

In using the expression "non-venereal disease" in this connection I refer, as may be imagined, to the communication of syphilis by other means than illicit sexual intercourse, for marital syphilis, as will be seen, furnishes annually a very considerable number of cases of syphilis innocently acquired.

The subject of hereditary syphilis, or the transmission of the disease to the offspring by either or both parents is a very large field of study and need not be entered upon here, as the non-venereal origin of syphilis in the vast army of these innocent victims in years past cannot be called into question; as a single instance may be mentioned, the records of the Moscow Hospital, where in eleven years there were 2,002 children born with syphilis, of whom 1,425, or 70 per cent., died.²

Fournier³ has recently furnished some interesting data in regard to the proportion of cases of innocent syphilis occurring among women, which may be briefly alluded to. The statistics were taken from 887 cases of syphilis in females in his private practice, where notes of the cases were kept; among these it was found that the disease was communicated in a non-sexual manner in 45 cases, or 5.07 of the entire number, as follows:

In domestic contagion from nurslings, children, wet nurses or nursery maids with syphilis (all the cases occurring in married women or young children)	12
Syphilis transmitted to nurses by children hereditarily syphilitic	8
Cases of hereditary syphilis	7
Cases of midwives infected on the finger in the exercise of their profession	5
Cases of syphilis acquired accidentally in infancy	4
Syphilis communicated by vaccination	2
Cases of syphilis communicated by Eustachian catheterization	2
Case of syphilis communicated by rape	1
Unknown, but non-venereal origin	4

Total cases of non-sexual syphilis, 45

Among the remaining 842 cases there were 220 women known to be married, from whose histories conclusions were drawn, doubtful cases being excluded. Of these 220, 56 were further excluded, as having either contracted syphilis from a lover, or for other reasons, leaving 164, or 20 per cent. of all the women who were infected honestly and innocently in their marriage relations through no fault of their own. Adding this to the 5 per cent. already considered, Fournier concludes that in about 25 per cent. of all cases in females, syphilis is acquired innocently and undeservedly.

The proportion of cases of syphilis in males where the disease is thus acquired is undoubtedly smaller than in females, but it is probably much

greater than one would imagine who had not considered the subject. Several years ago I presented data in regard to the cases of extra-genital chancres which had passed under my observation, before the New York State Medical Society, and the number of cases then reported, namely, 27, has since been swelled to 58. Now, of these 58 cases, no less than 30 were in males, to 28 in females. If the records of extra-genital chancres in males occurring in literature are carefully studied it will be found that the number is really very large where the disease has been acquired in a perfectly innocent manner. As a single illustration of the infection of males in this manner, it may be mentioned that in several of the epidemics of syphilis from vaccination, lactation, breast drawing, and the like, it has been repeatedly recorded that several of the women who became infected communicated the disease innocently to their husbands, by means of a chancre of the penis.

The modes and methods by means of which syphilis has been communicated innocently are almost beyond the comprehension of one who has not given thought or research to the subject, and the instances are multiplying in recent literature in a most remarkable manner; showing that, so far from there being less danger than in more ignorant times, the actual instances are increasing as the advance of civilization furnishes new opportunities of immediate or mediate contact and inoculation.

Time will not suffice to enter at all fully into the subject before us, much less to give details of many illustrative cases, but I will endeavor to indicate the lines or directions in which, from past experience, infection may be most commonly expected. Three main groups or varieties of cases of non-venereal infection of syphilis may very readily be made out, according as the inoculation takes place:

1. Among those having common relations, and through the bonds of common interest in domestic and industrial life; to this class the term *syphilis economica* has been given.

2. Among infants and those having to do with their care and nourishment, or *syphilis brephotropica*, and;

3. In connection with the various forms of body-service, medical and surgical, or of like nature—*syphilis technica*. In each of these groups we will find a large number of subdivisions, amounting to over one hundred, representing different modes of communicating the disease which have thus far been found recorded in literature. These divisions may now be considered a little more in detail.

1. *Syphilis Economica*.—Here we have the instances of the spread of syphilis in the family by the common and necessary relations of life, and in the extension of the family relation to the various groups of industrial pursuits; and further,

¹ The limits of this Address permit of but a short synopsis of the matter which has been prepared on this subject, and only the briefest outline of the data can be given.

² Quoted by Sturgis. Appendix to Diday on Infantile Syphilis. New York, 1883, p. 265.

³ Fournier. Annales de Dermat. et de Syph. Tome viii, No. 12. 1878. New series, p. 757.

the communication of syphilis from one individual to another in the different conditions of individual life. Time forbids more than a mention of the ultimate data belonging to these main groups, most of which have been corroborated by a number of instances reported by different observers. Under implements and vessels we find spoons, knives, forks, cups, glasses and jugs. Tobacco pipes have been the very frequent means of transmitting the disease, and it has also been conveyed by means of cigars, both when passed from one smoker to another, and also when fresh from the manufacturer. Torches passed from mouth to mouth have also been the means of conveying syphilis. Wearing apparel, such as shirts, drawers, pantaloons, bathing-suits, also handkerchiefs, gloves and masks, have all served to convey syphilis; as also lint, plaster; likewise bedding and toilet articles, such as sheets, pillows, towels and sponges, together with combs, syringes and tooth brushes. It is a little remarkable that privy seats and public urinals, which are popularly supposed to be a fruitful source of infection, are found very rarely referred to in a serious manner, and really not a single well authenticated case has been met with recorded in literature, even after a most diligent search during the past three years; a rather striking illustration of the fallacy of popular impressions or beliefs. As more curious methods of conveying the syphilitic poison may be mentioned an opera glass, and a cane.

The next group, relating to industrial transmission of syphilis, includes some most interesting data. Here we find quite a large class of cases, made up of a number of trades or occupations, where the poison is conveyed through the mouth, by the use of necessary implements of the calling. Thus, the well known glass-blowers' syphilis has in times past been conveyed to a very considerable number of persons through the common use of the pipe employed; a total number of at least 162 cases have been found reported, there being repeatedly small epidemics of syphilis from this cause. At one time, when from twelve to fifteen men were thus infected in one factory, there were also five or six of their wives who received the disease again innocently from them, besides many children. Cases are reported where assayers and goldsmiths have been infected from blowpipes used in common, also an instance where the whole family of a weaver received syphilis from a pipe used to sprinkle the cloth, it being passed from mouth to mouth. Musicians have acquired the disease through the mouth-piece of their instruments, and a car-conductor by means of a whistle borrowed from a syphilitic friend. A curious method of the transmission of syphilis is found in an instance where three furriers acquired chancre in the lip by means of the thread which was drawn through the lips and bitten off; the thread abraded the lips and at the same time conveyed

the poison. A case is reported where a maker of artificial flowers was infected through her handiwork, and an instance where tack-nails passed from the mouth of one upholsterer with mucous patches to another conveyed the poison to abrasions caused by the nails.

A number of cases are on record where pens, pencils and paper-cutters put in the mouth have carried the poison of syphilis, and one where a piece of lip-glue used after a syphilitic was the means of transferring the poison. A single case, not over-carefully recorded, has been found where syphilitic inoculation was chargeable to a coin put in the mouth, but no instances have been discovered where paper-money conveyed the poison; this is not a little remarkable in view of the frequent habit of wetting the fingers on the lips in handling paper-money.

Laundresses have been reported as acquiring syphilis through their occupation, but the instances are very rare and sometimes dubious. Bundles of cast-off clothing and rags have also been infected thereby, and in one instance it is alleged that the *acarus scabiei* conveyed the poison. This latter, however, seems extremely improbable, as it is far more likely that the virus was transferred by scratching to the interdigital space where the chancre appeared.

We come next to the group of cases pertaining to individuals in various conditions in life, which relates to the personal transference of the poison by kissing, biting, scratching, pinching, and contact of parts. Kissing affords a most prolific source for the propagation of syphilis, and probably comes next to the venereal act in point of frequency of cases thus acquired. The number of instances of this on record is very large. Biting has also furnished a large number of cases, and a case is on record where the disease was communicated intentionally by a bite, the giver being actuated by personal spite and hatred. Scratching and pinching, and also individual contact in carrying one person by another, have all furnished cases of non-venereal syphilis.

2. *Syphilis Bephotrophica*.—The nutrition of and attendance upon infants has always been a very fruitful source of the non-venereal transmission of syphilis, and literature is full of accounts where not only single cases or groups of individuals have been thus infected, but even where syphilis has by this means become almost epidemic, many being attacked before the real nature of the disease was recognized and its progress arrested. Wet-nurses acquire the disease from infants, who may either be hereditarily syphilitic or who have acquired the disease in some of the many manners to be mentioned later. Infants receive syphilis from wet-nurses, generally through chancres or mucous patches on the breasts, the nurse having acquired the disease either in married life, or from a syphilitic child, or in other manner.

A number of epidemics are on record where from sixteen to twenty-three persons have thus acquired the disease, started by a single syphilitic child, and in the celebrated "Pian de Nerac," occurring in a town in the southeast of France, more than forty women and children were infected, besides a number of husbands and others who concealed their disease.

Hand feeding has frequently been the means of communicating syphilis through the agency of feeding bottles, sugar-teats, cups, spoons, etc., of which many reports are found in literature which need not be here detailed. A single illustration may be given of a case observed by Hutchinson: A woman bore a number of syphilitic children as a result of the disease occurring before marriage. Her husband escaped infection until he acquired a chancre of the tonsil from his habit of starting the feeding-bottle with his mouth, in the night, for his fourth child, who was at that time suffering from a syphilitic mouth. Multitudes of instances are on record where the child has acquired syphilis through feeding implements.

The various offices and relations connected with attendance upon children are also often the means of propagating the disease between them and attendants. Cases are on record where wash water, sponges, syringes, combs, napkins, clothing and other articles have served as the means of conveying the contagion in one or the other direction. The various modes of contact between infants and adults in caring for them have also afforded opportunities for the transmission of syphilis. Thus a case is reported by Waller, where an old woman aged 70 years contracted a chancre on the left cheek and one on the left neck, at points where she was accustomed to hold a syphilitic infant in quieting it to sleep, and a number of instances are on record where a chancre has occurred on the forearm from contact with a diseased infant in carrying. Scratches and tooth wounds inflicted by syphilitic infants have repeatedly given rise to chancres, while a large number of cases are to be found where infants have received an extra genital chancre from the kissing and fondling of syphilitic adults.

3. *Syphilis Technica*.—The third main class of cases of the non-venereal transmission of syphilis relates to the acquiring the disease in connection with the various forms of body service, medical and surgical, or in others of like nature, as by nurses and attendants. Here we find three very clearly distinguishable groups of instances: 1. Where the operator is the victim; 2, where the operator is the syphilifee; and 3, where the operator is the medium.

Syphilis has been acquired by physicians and others in the pursuit of their profession in almost numberless instances, and often in a most unexpected manner. Surgeons have received the poison through wounds during operations, and an-

atomists during dissections. It is also sometimes acquired in manipulative procedures in spite of the utmost precaution. Jullien⁴ relates a case where an eminent specialist had a slight bleeding lesion on the finger and was called upon to examine a chancre upon the upper surface of the glans penis. He held the wounded finger carefully aloof from the sore, but during the examination he found that there was a second chancre of the scrotum which had just come in contact with the abrasion which he had striven to protect. Recognizing the danger, he at once washed carefully and cleansed the part thoroughly, but all in vain, as a chancre formed on the wounded part and the syphilis ran its course.

Accoucheurs and midwives furnish by far the largest number of cases of infection of this class, and literature is full of accounts of the same; personally I have seen five or six cases of digital chancre in physicians which had this origin, one of whom infected his wife. Dentists also occasionally acquire chancre of the finger from infection from mucous patches in the mouths of those on whom they are operating.

Chancres have also been produced upon the eyelids, nostrils, and lips of physicians and attendants by conveying the virus on the fingers to the parts infected, and instances are on record where the patient, while coughing, has projected the poison in the physician's face and a chancre of the eyelid or elsewhere has resulted. On one occasion a physician acquired a chancre of the tonsil from practicing artificial respiration with the mouth on a syphilitic child. Many instances may be found where individuals have become infected in the practice of breast drawing with the mouth, and also by sucking recent wounds.

The next class of cases in this group refers to those in which the operator serves as the syphilifer, and communicates his own disease to others; of this variety there are large numbers of instances on record. We have already noticed that accoucheurs and midwives often contract syphilis in their calling, and numerous instances are on record where they have been the means of spreading the disease to others, and even in large numbers. The celebrated epidemic at St. Euphémie, in France, was of this nature. A midwife acquired a chancre of the right index finger, followed by a full attack of constitutional syphilis. She still practiced her calling for four months, and communicated syphilis to more than fifty women, and through them at least thirty others were infected. In another epidemic in France over 100 were infected with syphilis, and very recently Klein⁵ reported an epidemic in England where thirty married women, nine husbands, and two

⁴ Jullien. *Traité pratique des Mal. Vénér.*, 2d edit., Paris 1856, p. 537.
⁵ Klein: *Brit. Med. Journal*, January 20, 1883.

infants contracted syphilis, directly or indirectly, from a diseased midwife.

Another very fruitful source for the propagation of non-venereal syphilis has been found in the operation of breast-drawing by the mouth, which has been mentioned as sometimes giving rise to syphilis in the operator. This practice is less common in this country and among the more highly civilized people than among the peasantry of European countries, where it has sometimes given rise to epidemics of syphilis of considerable size. As early as 1654 an event of this nature was recorded, where a professional breast-drawer infected many nursing women with chancre of the breast, and these in turn infected their nurslings, who communicated the disease to many others. An epidemic of this kind is reported by Leloir⁶ as occurring as late as 1880, where a woman acquired a chancre of the lip, and she infected four women, who in turn gave the disease to three nursing infants, one of whom, as also one of the women, died of the disease; one of the infants infected its father through the nursing-bottle and another infant gave the disease to its wet-nurse, who again transmitted it to her own infant. Many more most interesting illustrations could be given but for want of space.

A rather curious mode of propagating syphilis innocently is found in the practice of removing particles from the eye by means of the tip of the tongue. In two small villages in Russia, Tep-ljaschin⁷ found, among a population of 532 persons, no less than 68 individuals, 23 males and 45 females, affected with syphilis, about one-quarter of them being under 10 years of age. One-half of the entire number had been infected directly by a female quack who had followed the industry of removing foreign bodies from the eye, and treating trachoma, with her tongue. The woman became infected in her calling, and pursued it while diseased, with the results mentioned. A number of single instances of the same method of infection have been recorded, two of which occurred in this country.⁸

Wound sucking, which has been mentioned as giving syphilis to the operator, has also been the occasion of communicating the disease to the person operated upon.

Tattooing has been reported as the means of conveying syphilis by a number of observers, and a total of no less than 67 recorded cases has been found; as is well known, the poison is conveyed from mucous patches on the operator's lips, by means of saliva used to moisten the needles or the pigment during the operation.

The last group of these cases of the non-venereal communication of syphilis relates the operator acting as a medium, conveying the poison from

one individual to another. In illustration of this, a large amount of material could be presented, but space permits of but brief mention of the principal facts.

Vaccination, as is well known, has on repeated occasions given opportunity for the transmission of syphilis, and need not be dwelt upon here. Hundreds of cases of this description are found in literature, and as an example may be mentioned the well-known epidemic at Rivalle, Italy, where 80 cases were reported, of whom 7 died.

Ritual circumcision has also occasionally been the means of syphilitic inoculation, the first reported cases occurring in 1805, since which time a considerable number of observers have reported instances of the same, and on one occasion—referred to by Jaffe⁹—thirty boys were infected by one operator in Vienna.

Transplantation of teeth—an old practice recently somewhat revived—has been the means of conveying syphilis, and skin-grafting has been followed with like result.

The operation of wet-cupping has repeatedly given rise to syphilitic contagion, the oldest account of this being in the case of the celebrated "Maladie de Brunn," in Moravia, in 1578. In this village no less than 80 persons were infected in three months by this means, in addition to about a hundred in the surrounding country. In Finland repeated epidemics have occurred from this cause, in one instance nearly two hundred persons being infected.

Cases have been reported where minor surgical operations, as opening abscesses, scarifying a hydrocele, the use of serres-fines after circumcision, etc., have given rise to chancres with syphilitic inoculation in the site of the wound, and injuries made by dental instruments have in like manner produced syphilitic infection. Razor wounds are also sometimes the site of syphilitic inoculation, possibly produced during shaving, possibly afterwards from other sources.

Eustachian catheterization has on repeated occasions been the means of conveying the syphilitic poison, no less than twenty-five persons reporting cases where this had occurred; of these cases about sixty were traced to the practice of a certain ear specialist in Paris, and some cases of the same nature have also been reported as occurring in this country. Surgical sounds and speculæ are also accredited with having produced like results.

From this very hasty and by no means complete sketch of the recorded methods and instances of the communication of syphilis in the various walks and occupations of life, it is readily seen that the disease may and does occupy an important position among those which can at any time affect the least suspecting, and that it is by no means always a venereal affection. It has been

⁶ Leloir: *Leçons sur la Syphilis*, Paris, 1886. P. 54.

⁷ Tep-ljaschin. Cited in Vertelj. *f. Derm. u. Syph.*, 1887, p. 1138.

⁸ Cited by de Beck. *Hard Chancres of the Eyelid and Conj.* Cincinnati, 1888. P. 45.

⁹ Jaffe: *Die Rituelle Circumcision*, etc. Leipzig, 1885.

found to attack the young and the old, quite irrespective of sex and condition, and in all the instances alluded to quite independent of any venereal act or possibility. As each new case or series of cases comes to light, it becomes more and more probable that the number of instances in which syphilitic infection has thus innocently occurred is much greater than is commonly imagined. With a poison so virulent, and capable of being transported and introduced in so many different ways, and, as far as is known, endowed with the possibility of being preserved for an indefinite period, the only wonder is that cases of the non-venereal communication of syphilis are not even more frequent than they are now known to be.

The explanation is found in the nature of the virus, which requires a broken surface of skin or mucous membrane for its admission, and the application of the poison in sufficient quantity; when the conditions for its entrance are all present, inoculation rarely fails to take place on any and every portion of the body.

The reason why syphilis is so preëminently a venereal disease is found in the nature of the venereal act, the tender and delicate structure of the epithelial covering of the parts involved, and the frequent injury, together with the long period of comparative health during which the poison held in the system is capable of infecting others. When similar conditions are at all fulfilled in reference to other portions of the body and under similar circumstances, as in kissing, biting, and other modes of exposure, the contagion takes place equally readily and quite as certainly. Moreover, certain other diseases, as scabies, and the vegetable parasitic affections, are not infrequently communicated in sexual congress, and if this was had during the contagious period of such diseases as small-pox, scarlatina, and diphtheria, these would also be acquired, but in none of these cases would the term "venereal disease" be applied.

The thought here presented is that there is nothing in syphilis which makes it wholly, or necessarily, a venereal disease, nor which warrants the stigma which almost invariably attaches itself to the individual affected therewith. While the large majority of cases are undoubtedly acquired through venereal acts, there are also many cases, and we have seen that Fournier puts it at 25 per cent. in women, in whom the disease is innocently acquired. In some studies recently made I have collected the figures relating to about 4,000 distinct cases of extra-genital chancre in different locations, reported by various observers, a large share of which were non-venereal, and in a list of about one hundred epidemics of non-venereal syphilis which I have also tabulated, upwards of 3,000 victims were mentioned, in addition to indefinite statements where large numbers were alluded to. All this is quite exclusive of the

thousands of cases indefinitely referred to in literature, and the many scattered instances of innocent infection, where no record is made of the site of the chancre. Moreover, in all the accounts of syphilis where it has appeared, and even still exists endemically in many localities, as in the Radezyge of Norway, Sibbens of Scotland, Scherlievo of Dalmatia, and the syphiloid diseases of many countries, constant reference is made to its transference from one person to another by eating and drinking utensils, pipes, also by nursing, etc.

We come now to the most important part of the subject, namely, the prophylaxis of the disease. If, as we have seen, syphilis attacks the innocent in such a relatively considerable proportion of instances, and if every one who acquires the disease through venereal means becomes a focus from which syphilis may spread not only to the guilty but also to the most innocent and unsuspecting, it becomes the highest duty of all to curtail the amount of the disease present, and the ravages it may make, in every possible manner.

From what has preceded it may be readily understood, therefore, that syphilis is a disease which presents no little danger to the public health and to that of every individual. While undoubtedly an exaggerated idea of the perils connected with it could easily be obtained from the material presented in the preceding pages, it is impossible to shut the eyes to the fact that a measure of real danger exists, as is evidenced by the thousands of cases which have been in some manner referred to, where the disease has been acquired in a perfectly innocent manner. No amount of reasoning or argument can do away with the facts which have been quoted on the highest medical authorities, and the records of cases where the disease has been communicated innocently, not only in the daily intercourse and daily occupations of life, but also in the most varied relations; in the care of the sick and of children, in industrial pursuits, and in professional callings.

Syphilis is now one of the principal diseases which affect the human race, and undoubtedly is on the increase, owing to the utter want of all sanitary control over it in the larger part of the world. There are no data accessible to show its relative prevalence in different sections, except those relating to the armies of various nations; in many or most instances, however, even these returns are not available, inasmuch as they relate to "venereal diseases," and not to syphilis as a distinct malady.

In this country, I learn from the Surgeon-General's Office that there is no reliable information in regard to the prevalence of syphilis in the United States, there being not even any data furnished from our army. According to Sturgis,¹⁰ however, in the Army of the Department of the East, in

¹⁰ Sturgis. *Relations of Syphilis to the Public Health*. Trans. Am. Med. Ass'n, 1877.

the five years from 1870 to 1874, there were 1,488 cases of syphilis, or 4.22 cases per 100 men; in the Mercantile Marine of the United States, during 1872 and 1873, there were 3,779 cases of syphilis, or 15.33 per cent. of all patients treated. In the city of New York no less than 16.19 per cent. of all cases of sickness in the Mercantile Marine service was syphilitic. From data taken from a number of dispensaries and hospitals in New York City, during the year 1873, Dr. Sturgis estimates that the number of persons treated for syphilis during that year, in this city, cannot be far from 50,000.

Some idea of the frequency of syphilis throughout the country may be obtained from the statistics collected by the American Dermatological Association, from different cities in the United States, during the past ten years. It is here found that fully one-tenth of all cases reported by members of the Association were the different lesions of the skin caused by syphilis, it coming next to eczema in frequency. In some respects this presents, perhaps, one of the best means from which to form a judgment in regard to the comparative frequency of this malady, for as syphilis rarely fails to manifest itself on the skin at some period during its course, cases of this disease are more likely to be observed and studied in dermatological practice than in any other department of medicine. It is understood that the data referred to were collected from public and private dermatological practice, and not from venereal clinics.

It will be noticed that in our discussion of the subject very little reference has been made to syphilis as a venereal disease. From reasons which have abundantly appeared in the preceding pages it will be seen that syphilis is as a disease worthy of the utmost study, and from what is known of its various manifestations in the different organs of the body it stands second to none in pathological importance. The fact that in so large a share of cases syphilis happens to be communicated through sexual contact, and in so great a proportion of these it is from impure venereal relations, by no means warrants its relegation to a class of affections the mention of which is tabooed in good society.

While syphilis is a "venereal disease" in a certain sense, its prophylaxis by no means relates entirely to the restriction of venereal diseases, but must be placed upon the broader ground of the protection of the public health, and that of individuals, from a malady which affects the innocent and guilty alike, and which may come both when its dangers are anticipated and guarded against, and when they are least suspected.

In the matter of protection against syphilis, therefore, the subject of prostitution becomes a wholly secondary consideration, and the question is not one of "regulating prostitution," or of inspecting, licensing, or legalizing the "social

evil," or of protecting those engaged in it, but relates to the prevention of the unnecessary extension of a disease which certainly does produce a vast amount of sickness, misery and death.

That the spread of syphilis can be checked is self-evident, as has been conclusively proven by the fact that the large and small epidemics which have been mentioned have all been arrested when the cause has been recognized and sufficient measures have been introduced to prevent the further transference of the poison from one person to another. It is also abundantly shown in those instances where foreign governments have enforced stringent measures looking in this direction. We know certainly that the virus does not develop *de novo*, but that it is always communicated from one individual to another; we know, also, that within a certain period of time the disease ceases to be contagious or communicable, in each individual, so that if no new infection is introduced into a community, and those within it are guarded against communicating the disease until the contagion period has passed, the malady will cease to exist.

Such precautions are exercised, both by the public and by individuals, against other contagious diseases, small-pox, scarlatina, diphtheria, yellow fever, etc., and it is no more than proper that syphilis should be placed in the same category, and protection should be afforded against it, for it counts its victims by thousands, where other diseases count hundreds. The deaths ultimately caused by syphilis are now more than those from small-pox, while the injury to health, and the interference with life-work is much greater in the former than in the latter.

In regard to the means of prophylaxis against syphilis, these relate to the individual and to the public.

Individual prophylaxis will result from a more widespread knowledge on the part of the profession and the laity of the manifestations of syphilis, its dangers and the modes in which it may be communicated. In the history of all the epidemics of this disease, large and small, it is constantly stated that the true nature of the difficulty was not recognized, or that the dangers of infection were not known or appreciated even, until numbers were affected. As our knowledge of syphilis widens, and as the synthetic history of the disease is formed, so much less will be the danger of its communication by innocent means.

A glance at the clinical history of *syphilis insonitum* as sketched in the preceding pages shows this very conclusively. For instance, the dangers of its communication by vaccination were never thought of until a considerable number of cases had been reported, and undoubtedly multitudes of others had occurred which were never known to the public; the inoculation by means of Eustachian catheterization was not suspected until many

cases had happened in the practice of a certain physician in Paris, in such a manner that the facts were indisputable; ritual circumcision had been practiced for centuries before it was demonstrated that syphilis could be communicated in the operation; and many other illustrations could be given.

Now, however, that these dangers are known and more or less widely recognized, we no longer have such events to record as are found in earlier years, and infection by lactation and other known methods is yearly becoming less frequent; in most countries such general outbreaks of syphilis as the *Maladies de Brun, de St. Euphémie, de Chavanne-Lure, the Pian de Nerac*, and the many other minor epidemics of the disease, are now well-nigh impossible.

But, on the other hand, it is not equally true that the innocent acquiring of syphilis is really becoming less frequent of late years, for with increased facilities of intercourse the opportunities for its propagation seem to be multiplied, and the actual number of instances of *syphilis insontium* seem to occur in larger proportion than formerly, as may be judged from the abundant records of such cases in current literature. Of course a certain measure of this apparent increase must be ascribed to the more accurate methods of recording in modern times, and the great facility of publication of the same. The present writer has personally recorded some sixty cases of extra-genital chancre, in addition to dozens, or rather hundreds, of cases of hereditary and marital syphilis innocently acquired.

The basis, therefore, upon which personal safety from syphilis must rest, has yet to be reached, for while the disease is allowed to spread unhindered by venereal contact, so long will cases of innocent syphilis continue to abound. This is evidenced by innumerable cases on record where the disease has been acquired both by necessary and unnecessary contact with those thus diseased. A single illustration may be mentioned, where a syphilitic man infected his wife, she then infected a woman who drew the breast, and through this latter woman ten others became infected with syphilis, several of whom died from the disease. How much further the malady spread was not recorded, but it is unlikely that it ended there.

Literature abounds in references to the medico-legal aspect of venereal diseases, and of syphilis in particular, and even a brief abstract of the subject would occupy much more space than can be given, while a transcription of the laws and enactments bearing thereon in other countries might occupy volumes. It is, indeed, a most difficult subject to handle, and one which has occupied the attention of many physicians and jurists, especially in France, Belgium and Germany, and it is in those countries that most efforts have been made by the Governments to stay the progress of the disease.

In Paris, as is known, there is a certain police inspection of public women, and statistics show¹¹ that from 1877 to 1881 between 800 and 1,200 women were each year sent to the prison hospital of St. Lazare with syphilis. The number of individuals who might be infected from these syphilitics can hardly be computed. In other cities in Europe there is also exercised a control over public characters infected with syphilis, and a varying amount of protection from the disease is thus afforded.

In England a reaction took place, as is well known, against the "Contagious Diseases Acts," and they were repealed some ten years ago, and no effort is now made there to control the development of syphilis.

In this country, as far as is known, there are no sanitary safeguards against the spread of syphilis, and there are very few hospital advantages for those thus affected, while in most of the cities of Europe there are large accommodations for this class of patients, amounting in Paris to between 1,000 and 2,000 beds. New York has but a relatively small service at Charity Hospital, while the vast majority of syphilitic patients are treated at the dispensaries, and are free to go about spreading the disease, often with lesions of a most dangerously infective character. It would be difficult to convey an idea of the carelessness and indifference of some of these patients when informed of the dangers attending their disease, and many, indeed, the far larger share of them, disappear from treatment long before they have ceased to be dangerous to others.

The republican ideas of this country would probably never endorse or submit to such sanitary police inspection and restraint as is exercised in certain European cities, but the question arises if there is not some way in which the end can be reached of arresting the spread of this dangerous disease? Can there be no safeguards thrown out which shall prevent its extension here as in certain countries in Europe, notably Russia, where whole communities have been syphilized, and Portugal, where the disease is almost universal?

The first step toward this, we believe, will be found in placing syphilis among other contagious diseases which come under the jurisdiction of the health officers, so that legitimate means can be devised and executed to check its spread, as in the case of other contagious diseases mentioned. The late Marion Sims¹² alluded to this subject in his address as President of the American Medical Association some years ago, using these words: "There can be no difference of opinion among us regarding the two following propositions: First, we want a system of sanitary inspection and control which

¹¹ Parent-Duchatelet. *De la Prostit. dans la Ville de Paris*, 1857, vol. ii, p. 395.

¹² Vibert. *Nouveau Dict. de Méd. et de Chir. prat.*, vol. xxxiv, 1883, p. 916.

¹³ Sims. *Transactions Amer. Med. Assoc.*, 1876.

will enable us to prevent the importation of syphilis from abroad; and second, we want a system of sanitary inspection and control which will enable us to take charge of the subjects of syphilis at home, and prevent them from spreading it through the community."

The profession is undoubtedly unanimous in regard to the desirability of having such a restraining influence upon syphilis as is indicated in the quotation given, and the only question which arises is as to the best method of carrying the same into effect.

If syphilis were first recognized as one of the great contagious diseases against which it is the duty of the Government to protect the community, the details of operation would probably follow in time, and as the public became aware of the dangers from the disease and the benefits accruing from its restriction, there would be no difficulty in securing proper laws relating to the subject.

It would be out of place here to present any detailed plan of operation, for the subject is of such vast magnitude and importance that it could not be compassed within the limits of this address, even if the writer were possessed of sufficient knowledge and judgment to formulate such a scheme. The suggestion, however, is most earnestly put forward that the time has certainly arrived when the evils resulting from syphilis should be fully recognized and the proper measures taken for its restriction. No longer looked upon as a purely venereal disease, it should be placed under the control of the proper health authorities, and it should be regarded quite as criminal to transmit syphilis knowingly as it is to communicate small-pox, scarlatina or diphtheria. It would then become the public duty of each and every one to guard against the malady, and its spread would be proportionately restricted. The hotel proprietor who knowingly allows one with small-pox to infect others, or who should not exercise due precautions after such a patient had occupied a bed or room, would receive punishment; and I take it that the keeper of a brothel would be subject to like punishment in regard to the careless spread of small-pox, scarlatina or diphtheria. If, now, syphilis were included with these maladies, something would be accomplished toward checking the extension of the disease. Such a person would then see that all the inmates of the house were free from syphilis and, again, would be very careful that no one entering the house should introduce the disease,

That a person may be held liable for communicating syphilis is abundantly shown by the many cases occurring in the literature of foreign countries. The works of Tardieu,¹⁴ Fournier,¹⁵ and others, are full of accounts of legal actions taken and fines and imprisonment inflicted for the wilful or

careless transmission of syphilis, and in some instances those actions were against physicians who had exercised precautions against the same.

How far the matter can be carried in regard to the restraint of syphilitics from exposing others cannot now be stated or even judged. Much enlightenment of the community is yet necessary in regard to the subject, and much thought will be requisite to determine exactly the best methods of controlling the slow but steady extension of the disease which is now taking place. These matters can safely be left for future consideration, after the first step has been taken in regard to placing syphilis among the other contagious diseases which are dangerous to the life and health of the Nation and of individuals. When syphilis is less frequent as a *venereal disease*, the cases of *non-venereal* or innocent syphilis will become proportionately rare.

EXPERT TESTIMONY AND MEDICAL EXPERTS.

Read before the Section on Medical Jurisprudence at the Thirtieth Annual Meeting of the American Medical Association, at Cincinnati, May 9, 1888.

BY ORPHEUS EVERTS, M.D.,
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At the Hertford assizes (1699), in the trial of a man accused of murder, the prosecution—as stated by Mr. Justice Stephen, in his learned history of the criminal law of England—"collected a body of doctors to substantiate the proposition propounded by the crown." This case, says the historian, "supplies nearly the earliest instance of a trial depending largely upon the evidence of experts." It is further said, however, by the learned author—and the fact is significant if well considered—that "the defendant contradicted the evidence of the experts in a way that still shows any one who reads the case, that he was fighting with a perfectly idle superstition."

It is a fact conceded by English law-writers, and indicated by the asperity of medical writers towards them, that English judges have never held medical experts, especially in cases of insanity, in high estimation; while in this country the fact is patent to all interested observers, that the testimony of medical experts exercises but little influence in determining verdicts, when not in harmony with popular sentiments, or notions, respecting the merits of any given case.

In view of such facts, may it not be well to consider, briefly, the following questions, namely: What is "Expert Testimony?" What are its essential elements of value? Who are medical experts?

Expert testimony differs from ordinary, or non-professional, testimony in this respect, viz: Ordinary testimony consists of statements of facts as observed by the witness stating them,

¹⁴ Tardieu. *Étude Médico-légale*, etc. Paris, 1879.

¹⁵ Fournier. *Nourrices et Nourrissons Syph.* Paris, 1878.

and opinions based upon such facts, exclusively, the facts having been first fully stated. Expert testimony consists of opinions, based upon facts, as observed by the witness, or presented for his consideration hypothetically—having been observed by others—that he, by reason of peculiar knowledge, is, alone, supposed to be capable of interpreting.

This definition of expert testimony being accepted, it should not be difficult to determine the elements of value pertaining thereto. They are: *First*. Scientific principles generalized from facts, applicable and equal, to the solution of the problem under consideration; and *Second*. Capability on the part of the professed expert to make use of such principles in the solution of the problem given without bias or prevarication.

That scientific principles, applicable, and adequate, to the solution of the problem given, are essential to value, in the constitution of expert testimony, may be inferred from the fact, that without a knowledge of such principles, the testimony of one witness, of equal intelligence, and opportunities of knowing, would be equal in value to that of another. It is, also, apparent that such principles, to be applicable, and adequate, must bear a definite relation to the facts presented for interpretation, and present features of consistency, and accuracy, that admit of no alternative construction. Were it not so: if, for example, the principles of the science of numbers were not definitely related to the facts of accounting—or not so consistent and accurate as to justify perfect confidence in the prediction that two and two, if added, will make four, it would require no argument to convince us that the testimony of an "expert" accountant would be of no especial value, the data of his calculations being unworthy of trust. The same might be said of the expert surveyor, engineer, or astronomer—the value of whose interpretations of facts is derived from the infallible accuracy of the principles of the science of numbers. So, too, with the chemist (the value of his testimony as an expert depending, primarily, upon the accuracy of the principles of his science), if the relation of chemical phenomena to conditions of matter were not definite and uniform—given phenomena being inevitably sequential to given conditions of matter—the expert testimony of the chemist would be comparatively, if not entirely, worthless. Nor is argument needed to convince us that the testimony of the most capable expert, informed by principles of the most accurate science, might be vitiated, or invalidated, by dishonesty.

What, then, is the real value of medical expert testimony? And who should be considered as medical experts? Doctors of medicine are called upon to testify as experts in a range of cases involving questions of malpractice in medicine proper, surgery and obstetrics; and in cases of suspected crime

in which questions of cause of sudden, or unhistoric death arise; and in cases of still greater difficulty and importance, in which questions of mental conditions affecting the rights and privileges of citizens have to be adjudicated. Does that aggregation of knowledge known as "medicine" furnish the necessary principles for their qualifications as experts in all such cases? Are all persons engaged in the practice of medicine, and popularly recognized as "doctors," informed by such principles as do pertain to the so-called "medical sciences." These questions become especially pertinent in view of the fact that there is no recognized standard of educational attainment pre-requisite to either the title or privileges of a doctor of medicine in this country—and the common law admits them all to testify as experts—subject only to the test of cross-examination, as to qualifications, by attorneys who may, or may not, be capable of exposing false pretensions.

When we consider, seriously, the natural capabilities, and acquired knowledges, of a large proportion of the multitude of men and women engaged in the practice of medicine in this country, and the questionable character of much that is taught by the numerous "schools," or sects, of medicine, as science, these questions assume still greater importance; and the presumption of law that all are experts becomes preposterous. Even after eliminating from consideration all persons engaged in the practice of medicine, who are not graduates of reputable, regular, medical schools, the presumption would still be too violent for entertainment.

What, as a matter of fact, does such a presumption imply? Nothing less than an affirmation that the sciences constituting medicine, as taught in our schools, are informed by principles that are definite, comprehensive, and trustworthy beyond dissention; and that every one certified proficient in medicine, by such schools, is competent to make intelligent use of them in the formation of opinions as medical experts, on all subjects.

But to get at the grain that may be in this chaff, let it be admitted that the instruction given in our schools is adequate to qualify medical witnesses to determine, as experts, whether or not an infant found dead was still-born; whether or not certain wounds, seen or described, were necessarily fatal. Whether or not certain deformities following injuries were the results of malpractice. Whether or not, as indicated by symptoms, and post-mortem appearances, and chemical and microscopical examinations, in any given instance, death was effected by poison, etc.; still, the more important qualification of the medical expert to determine questions of mental manifestations, and human actions, whether or not influenced by pathological conditions of brains, or other organs, remains to be accounted for. What has medicine in its widest range of

instruction to offer on this subject? After all, how little! The most thorough-going anatomist is no wiser, respecting the genesis of mind, or the relation of mental phenomena to material conditions, because of his dissections. The most learned and practical chemist knows no more of such matters, because of his analyses, and syntheses, of inorganic and organized bodies, than does the anatomist. Therapeutics throw no light of principles upon the subject. Surgery is dumb, and obstetrics blind, respecting mental science. Physiology—that wonderful and growing science, that is to be, to all other natural sciences, what Aaron's rod was to the rods of the Egyptian magicians—has it not already furnished us with a new psychology, and is it not adequate to our present necessities? Let us see. If we depend upon science to furnish principles answering to our necessities, what are the requisites? It is requisite that such principles shall be applicable, accurate, and indisputable. Does physiology, as now taught in our schools supply the need?

Admit the fact that physiology has already swallowed up all the metaphysical psychologies, and that brains, with their appendages, the nerves, have come to be recognized as essential organs of mind, by which all mental operations are conducted. That when a man, or any other animal, feels, perceives, remembers, imagines, reasons, wills, or acts, it is because of material capabilities, and his brain and nerves do something. That there is a relation more or less definite, of mental capabilities, and characteristics, to size, form, and quality, of brain structures; and an association of certain mental phenomena with certain areas of brain substance. That modifications of mental capabilities and expressions, constituting all of the many degrees of capability, and peculiarities of expression, known as "idiocy," "imbecility," "mania," "melancholia," and "dementia," may be effected by arrest of cerebral development, and modifications of brain activities, whether effecting constructive or destructive results, and concomitant transmutation of energy—admit all this, as pertaining to present physiological knowledge—still the fact is apparent that we have not been supplied with such scientific principles as would, alone qualify medical experts to testify as such, in the jurisprudence of insanity.

Physiology, as taught in our schools, is indeed, still in doubt respecting the relation of mind to body: whether consciousness is an inherent quality of matter, manifested, as all other qualities are, by motion; or an attribute of a supernatural, indwelling spiritual being, not subject to sensuous observation, but inspiring or instigating, all bodily activities. In doubt, whether mental manifestations are concomitants of brain activities instigated by an immaterial ego, or the

inevitable sequentials of ever-changing conditions of brain-substance, influenced by environments.

Nor can physiology tell us, in accordance with any theory, just what the brain or body, or spirit, does when a man feels, thinks, or acts; nor just what instigates his activities, determines his movements, and differentiates his capabilities. So that, even with these doubts of physiology dispelled, and the subject of man's creation and constitution forever withdrawn from the shadows of superstition, and the overawing presence of the supernatural; and the science of psychology arranged in line with all other natural sciences, in accordance with a monistic theory of the universe—of which men are inseparable particles—we should still be unable to predict, with certainty, the phenomenal sequences of all given conditions of body, or brain, precedent; or to infer, with precision, conditions of body, or brain, by any given mental manifestations, unaided by other than physiological information.

Why then should doctors of medicine be regarded as experts in the jurisprudence of insanity, more than other persons of equal general intelligence? Is it not because of the fact that the official relation of the doctor of medicine to the afflicted, is now, as it ever has been, the most intricate, intimate, and privileged, known, or tolerated, by civilized or savage society; and because his movements as diagnostician, and dispenser of drugs with healing virtues are, to the uninitiated, within that same shadow of superstition that obscures their vision when trying to comprehend the mystery of thought, whether sane or insane? Hence, his greater opportunities of observation and study of the natural history of men and their disorders, and the endless variations of mental phenomena as related to material, observable, facts. Must not any claim of qualification as an expert in the jurisprudence of insanity, therefore, be based upon special, long-continued, intelligent, observation of the insane; and careful, comprehensive, studies of the natural history of insanity—rather than special knowledges derived from medical authorities—however advantageous such knowledges may be to the observer and student? And must not the value of the testimony of experts, so qualified, correspond to the natural capabilities, advantages of education, and experience, and general interest in the subject, of the persons testifying?

In these days, therefore, of specialties in medicine, and the habitual commitment of the insane to hospitals, or asylums, for treatment, or maintenance, at the earliest practicable moment, but few general practitioners of medicine have either the opportunity or disposition to so qualify themselves as experts, in this branch of medical jurisprudence; and but few—to the credit of the profession be it said—voluntarily appear in court pretending to be such.

Of the second essential element of value mentioned, the integrity, and freedom from bias, of the expert witness, but little need be said. Perverted knowledge is more dangerous than conceited ignorance. The natural tendency, of experts, however, is to invalidate their opinions more or less, by the admission of color derived, imperceptibly, it may be, from the interest taken in behalf of the parties employing them. Instigated, also, by professional pride, experts, like detectives, are more zealous in finding what they are supposed to be peculiarly qualified to find, than otherwise; a fact that in this country has been, so far as expert testimony has influenced courts or juries in any way, advantageous to defendants, in cases of criminal prosecution; and of plaintiffs, in cases of contested wills.

These are natural tendencies that experienced experts are capable of overcoming, when recognized; but should not be overlooked in estimating the value of expert testimony.

Of the mercenary and venal expert, nothing need be said. If such there be, they have no proper place in a profession so proverbially unselfish as that of medicine.

Cincinnati Sanitarium, May 4, 1888.

CONDITIONS THAT PRECEDE SERIOUS LESIONS OF THE KIDNEYS.

Read before the Mississippi Valley Medical Society, at St. Louis, Mo., September 26, 1888.

BY C. S. BOND, M.S., M.D.,
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The untiring energy of medical men of this period seems to be expended in a search for the primary causes of disease. At one time we awaited the inevitable result of some fatal malady to observe at the post-mortem its pathology. At a later period we were eagerly watching some distressed patient, slightly affected with disease, with the hope that some intercurrent trouble might destroy him, for the sake of a pathological specimen representing a less severe lesion. To-day we sincerely hope the patient will not die at all, however charming a knowledge might be brought to light by the legacy of his pathology. What we most desire as medical men now, is to avert the more serious lesions by recognizing the first departure from the healthy condition.

After the lungs are largely solidified or filled with purulent cavities it is of little avail to advise a trip to the mountains, or give drugs to bring about renewed health. There is a fearful mortality among such a class of patients; but as we are enabled to recognize the beginning stages, by better means of diagnosis and a more extended knowledge of the disease, we can act more promptly, and either check the malady in its initial stages or, what is better, prevent the patient from having it at all.

What is true of these lung lesions is equally true of serious chronic conditions of the kidneys. Francis Delafield, in his article on chronic parenchymatous nephritis in "Pepper's System of Medicine," speaks thus of the prognosis: "The prognosis of chronic parenchymatous nephritis is not good, but still it is not so bad as that of chronic diffuse nephritis; some of the cases recover and never have any further indications of kidney disease." Of chronic diffuse nephritis he says: "In every case of chronic diffuse nephritis, the natural course of the morbid changes in the kidney tissue is to become more marked and involve more and more of the kidney. . . . The disease is always a very serious one, and terminates regularly in destroying life, but the length of time that will elapse before this fatal termination, and the precise way in which death will take place, are difficult to determine beforehand."

As this is the most frequent form of kidney disease, it will be apparent that the mortality is very great, and if there is hope in the future of doing better work for this death-stricken class of sufferers who annually find premature graves, we must learn to diagnose this disease before the point now reached; before we are able to recognize the conditions by our present methods of diagnosis. When we find a patient suffering from swelling of the extremities and face, muscular twitchings, dyspnoea, neuralgic pains in various parts of the body; a patient who passes albumen, with a diminished quantity of urine; who also passes casts and has a badly disturbed stomach, we are thus led to believe that such an one is beginning, or has begun sometime previous, the career of some serious lesion of the kidney; and our discovery is fraught with but little that can encourage the patient in cases of chronic changes in these organs.

For more than four years past I have been making examinations of urine from patients suspected of having some chronic lesion of the kidneys. The examinations have been conducted with an especial reference to the amount of urea excreted in twenty-four hours by individuals among this class of patients. Not only to cases of these diseases have the examinations extended, but also to other conditions of ill-health and to urine excreted by perfectly healthy individuals so far as I was able to judge. During this time I have made examinations for about eighty patients having the prominent symptoms laid down by the latest and best authorities as those denoting chronic structural changes in the kidneys. For these patients, extending over this space of time, I have a record of nearly 800 examinations, not including the other examinations just referred to relating to other diseases. During this time I have twice called the attention of the Indiana State Medical Society, through papers,¹ to this subject, and have

¹First paper, entitled "Urea," may be found in Transactions

received encouragement to extend this kind of investigation. I make mention of these observations in regard to urea not because I believe the subject to be an entirely new one, but because I want to call attention to some deductions later on, made from this series of cases, which I believe to be in line with our future knowledge on these subjects.

Many recent authorities have called to our notice the facts that in cases of serious kidney lesions urea is found in the blood in increased quantities, and that this in some way, when very excessive in amount, produces various nervous disturbances, even leading at times to complete coma; yet most of these same authorities have neglected to give us any very definite information concerning the normal quantity of this excrementitious matter which should be thrown off during twenty-four hours, or a knowledge of the amount of decrease in quantity in cases of diseased kidneys. The article by Dr. Delafeld, before referred to, makes mention of the deleterious effects of urea when retained in the blood, but in diagnosing the cases he makes no statement concerning the amount of urea excreted in twenty-four hours.

In "Flint's Practice of Medicine" a more absolute statement is found. He says "that the daily quantity of urea is lessened," and in another place states that "it is of importance to estimate the amount of urea excreted daily, for which purpose it is of course necessary to determine the percentage of urea in the total quantity of urine passed in twenty-four hours. The specific gravity of a single specimen of urine is manifestly of no value in forming an idea as to the daily excretion of urea. It is necessary to take into consideration at the same time the quantity of urine voided in the twenty-four hours." While this is of value and corresponds to the latest observations on this subject, still he neglects to call attention to the quantity of urea he deems a lessened quantity, and in what prognostic value he would regard these different conditions; items which are vital in making a proper conclusion. Again, he does not state what should be the *continued daily* excretion of urea, in order that a comparison of these quantities might be made with former records, and with the daily course of the disease as manifested by the symptoms. Bartholow states "that urea is excreted in less than the normal quantity, and varies with the changes in the specific gravity of the urine." Loomis in his "Practice" says: "As the elimination of urea is steadily diminished, it is important to subject the urine to frequent quantitative analyses." This is said in regard to chronic parenchymatous nephritis. In speaking of the waxy kidney he states that "the amount of urea excreted is but little if at all diminished."

It will be seen, therefore, that so far as these authors are concerned, they make very indefinite statements in regard to the excretion of urea in these diseases, and they use this knowledge very little in making a diagnosis or prognosis in an individual case. I believe that what is true with regard to these authors is also, in a greater degree, true of the mass of practitioners. The urine is not examined with reference to the amount of urea excreted in twenty-four hours, and a careful record kept of the quantity for certain days during a long interval of time, so that a comparison can be made with the varying symptoms. That urea is retained in the blood of these patients is acknowledged by all who have given this subject a careful study, and that it produces serious nervous disturbances is also admitted, yet not a great deal of consideration has been given these truths in making up the diagnosis of these lesions. In my experience, retained, or diminished quantities of urea, is one of the constant conditions found in cases answering in all other respects to chronic diseases of the kidneys, and I have begun to regard of very little importance the presence or absence of casts and albumen, except as a differential diagnosis between the varieties of these diseased conditions. I should very much prefer to know that a patient passed constantly but 10 grams of urea daily, as a means of diagnosis, than to find that another case passed large or small quantities of albumen and casts, since by the former knowledge I would not only know the class of disease to which this symptom points, but I would also know something of the extent of the mischief then present in these organs, and could therefore be on my guard in regard to conditions pending. The healthy individual weighing 140 lbs., and living on a mixed diet, should pass between 25 and 35 grams of urea in twenty-four hours. Whereas a non-nitrogenous diet for several days might reduce the quantity of excreted urea to 10 or 12 grams in the same interval, or the failure to take food for several hours in sufficient quantity would lessen the amount excreted for the time; but neither of these conditions would be continuous, and if they were so, the other conditions indicating retained urea, as shown by the symptoms, would not be present; therefore a patient who passes from 10 to 15 grams of urea daily, for a long interval of time, and complies with the other conditions of health, can be said to have some structural changes present in the kidneys, or will, at a longer or shorter interval, have these organs diseased, if this quantity of excreted urea remains constant.

This brings me to the subject to which I most desire to call your attention in this paper, and to make it more plain, I have grouped all the cases contained in my record into three classes, all of which agree in that there is a constant diminished quantity of urea excreted in twenty-four hours,

and this quantity has remained below the normal for several weeks, months or even years, producing a class of symptoms which are also common to all three of the classes to a greater or less degree, while no evidence of any other structural changes could be detected by the most careful examination, except those common to this condition.

CLASS I. This class of patients pass a diminished quantity of urea, from 6 to 18 grams in twenty-four hours. Generally the urine is diminished, but may be greatly increased in quantity during this period. They complain of being exhausted upon the least exertion, also have dyspnoea, vertigo, nausea, and sometimes vomiting. Always complain of neuralgic pains in various regions of the body, generally more common in the intercostal nerves. They have twitchings of the various muscles of the body and œdema of the hands, face, and extremities which is more or less marked. Patients pass albumen and casts in large quantities, and nearly all, if not quite all of such on my list have death marked after their names, or are in a condition that soon will bring about that result. This sad ending is reached by a series of explosions which is attributed by the patient to taking cold, but which seems to be the tendency of the disease after it has reached such a degree of destruction to the renal organs and other tissues of the body. This class of patients is such as is described by authors under the head of chronic Bright's disease.

CLASS II.—This class, as the *first*, pass a diminished quantity of urea in the twenty-four hours with more of a fluctuation in the daily quantity, as shown by several examinations at short intervals, and although this tendency is toward the normal quantity, still very few arrive at this point, and fewer remain long in this condition when the record is still further extended. Patients pass but faint traces of albumen occasionally, with a few granular or epithelial casts, but more often neither albumen nor casts are found. This class of patients have neuralgic pains, vertigo, more or less disturbance of the stomach at times, with exhaustion on slight exertion.

Generally after a long time the *second* class fall into the *first*, as shown by examination of urine and symptoms. A few however pass into the *third* group and after a time even into a condition of apparent health. More of this group consult a physician, than those of the *first* class, for the first time, and something can be done for these patients if the disease is recognized at this point.

CLASS III.—This class comprises a number of patients who pass at longer or shorter intervals diminished quantities of urea in the twenty-four hours, the variation being from 10 to 20 grams, but this condition does not remain constant for repeated examinations, the tendency being gradually to approach the normal standard when properly managed. Still some of these patients pass

from this to the second, and even to the first class and at last die, and post-mortem reveals chronic interstitial nephritis. This class also complain of general weakness, pain in arms and chest, vertigo and general nervous disturbances. They pass no casts or albumen. They have but very slight, if any, œdema in any part of the body and there is almost always a relation existing between the symptoms and the amount of urea excreted. So much is this the case that knowing one you can predict the other, *i. e.*, if the patient excretes more urea the patient feels better and if, on the other hand, the symptoms are worse the excretion is less.

It will be seen that this division into three classes is arbitrary, and that the classes merge into each other in such a way as to have no natural division, and I shall here cite a few individual cases to make this classification more plain. These cases have been chosen because I believe them to be typical ones representing these classes, and are but few among a number that might have been given in each group of all the cases on record.

Henry M., German, age 40. Came to office in September, 1885, complaining of general weakness, headache, nausea, dizziness, shortness of breath, swelling of lower extremities. These symptoms had been more or less severe for several months. Examination showed slight traces of albumen. No casts. Diminished quantity of urine, and passed only 7.2 grams of urea in twenty-four hours. At this time the patient was laying brick and following his trade most of the time. Was eating fairly well of a mixed diet. Upon saline cathartics and digitalis patient seemed to improve for some months, but suddenly, while at work, again began having some of former symptoms and soon grew worse, and in a few weeks was dead. Post-mortem showed chronic interstitial nephritis.

Mrs. S., age 35. Came to office in October, 1884, complaining of dyspnoea, insomnia, vertigo, nausea, pain in intercostal region and headache. Was doing her own work in house. Was eating moderately of a mixed diet. Passed two pints of urine in twenty-four hours, but this contained but 10 grams of urea. Passed no albumen or casts. Repeated examinations at intervals of three or four days showed quantity of urea excreted to range from 10 to 15 grams in twenty-four hours. This condition lasted for ten or twelve months, when extremities began swelling. The dyspnoea increased, albumen and casts appeared in the urine and patient died with chronic interstitial nephritis, as in first class.

Simon M. Had, in April, 1886, pain on passing water. General weakness for several months previous. Pain in left side almost constantly. Passed two pints of urine in twenty-four hours, containing at first 9.6 grams of urea. Patient

presented no other evidence of disease upon careful examination. Passed no albumen or casts. Ate a mixed diet, and could come to office. Patient gradually improved upon saline cathartics, digitalis, and nitro-glycerine, until quantity of urea excreted equalled 28 grams in twenty-four hours, when all distressing symptoms were gone and has been apparently in good health since.

Miss Alice D., age 27. Came to office in April, 1886. Had been treated for uterine misplacement, persistent anæmia, and general nervousness, for several months previous, but gradually grew worse. Careful examination of uterus showed it to be in normal position and in a perfectly healthy condition. Patient was pale. Had headache almost constantly. Pain in lumbar region and limbs. Was very nervous and was gradually losing flesh. No other evidence of disease could be detected. The urine showed, sp. gr. 1010. Acid. Passed two pints in twenty-four hours, with no albumen or casts. Per cent. of urea $\frac{1}{10}$, or 6.7 grams, in twenty-four hours. At this time patient was eating fairly well of a mixed diet. Upon saline cathartics and nitro-glycerine patient gradually improved, as shown by symptoms and quantity of urea excreted, until November, 1886, when she was discharged apparently well and has so continued since.

Miss P., age 20. Came to office in April, 1886, complaining of headache, dizziness and nausea. Feeling of general weakness. Pain in intercostal region. Chorea in right leg. Had been treated for these symptoms for several months previous but grew no better. Careful examination showed no other evidence of disease. Patient was eating moderately well of a mixed diet. Urine acid. Passed one and a quarter pints in twenty-four hours. No albumen or casts. Per cent. of urea $1\frac{1}{2}$, or 9 grams in twenty-four hours. Upon cathartics and nitro-glycerine patient gradually improved, until in one month she passed 17.2 grams of urea daily, and chorea and pains ceased, but still continued a feeling of general weakness, and she passed no more urea than the quantity named until November, 1886, when quantity reached 20 grams, where it has since remained, with slight variation, and patient is comfortable, but not well.

Another group of this third class of patients begin with the symptoms belonging in common with this class, and afterwards fall into the *second* and even into the *first* class, and die as befalls this class. These cases are cited, as I said above, in order that the general propositions might be made more clear, as well as to give an idea of the general course of treatment of the individual cases.

All these statements, drawn from a record of a number of cases, would seem to indicate that there are conditions which precede the more serious manifestations of chronic kidney lesions, that by a careful examination of the urine for the daily

quantity of urea, together with the symptoms, might be discovered long before the more hopeless symptoms that we now recognize as those of Bright's disease, are manifest. I believe, still further, that in view of these facts it must be admitted that there are changes taking place in the system at large which are in common with the conditions present in the kidneys, that interfere not only with excretion, but with general nutrition, and in some way produce at first irritation and afterwards more or less extensive chronic inflammatory results in various tissues of the body. As still further proof of this proposition it is only necessary to call attention to many inflammations which accompany serious lesions of the kidney, which originate often in the early stages of the diseased condition, and as I said before, I do not believe they are associated as cause and effect. It is a frequently observed fact that retinitis accompanies these diseased kidneys and is generally looked upon as secondary to the more serious kidney lesions, but retinitis has been often discovered in the earliest stages of kidney disease, and has even been pointed out as a forerunner of these conditions. Endocarditis, pericarditis, pleurisy, and other inflammations of serous membranes may also be reckoned as a part of these general disturbances, and a careful examination of the urine will disclose, even before the outbreak of these diseases, an abnormally small quantity of urea excreted by patients answering in all other respects to the conditions laid down above.

The point of departure from the healthy condition in the development of this class of patients is not well defined, but it is safe to say that it is either to be found in the vaso-motor and trophic disturbances due to an accumulation of urea in the blood, or these disturbances cause an interference with the normal excretion, and are then followed by this secondary irritation due to the presence of an abnormally large quantity of urea. It is the purpose of this paper, however, simply to show that at an early stage of these diseases a diminished quantity of urea is excreted in twenty-four hours, and that many of the symptoms at this early period are identical with those found in the well recognized cases of chronic kidney lesions. That this diminished quantity of urea can be made a factor in diagnosis long before albumen and casts occur in the urine, when the patient is going from one doctor to another, being treated for uterine disease, anæmia, dyspepsia, general debility, and nervous exhaustion. That it is the duty of every doctor to make examination of the urine for urea in cases presenting one or more of the prominent symptoms before mentioned in this paper, and to give such treatment as is well known to have the power to eliminate this irritating substance from the blood.

In conclusion, I believe firmly, that if doctors will give careful attention to these examinations

they will be able to recognize a very fatal malady in the infancy of its career, when there is hope of checking it before it reaches that almost hopeless condition now known as Bright's disease, and that you will be surprised many times to find that cases which you, or other doctors, had been treating for other diseases, pass after careful examinations and treatment into the second and third of these classes, and will by proper attention get still better, and after a time entirely recover. On the other hand, you will be equally surprised to find that patients you had been treating for dyspepsia, anæmia, or nervous prostration, will begin to pass albumen and casts, and be horrified at the knowledge that your patient has at last chronic Bright's disease.

THE EDUCATION OF THE DENTIST, YESTERDAY, TO-DAY AND TO-MORROW.

Read at the Joint Meeting of the American Dental Association and the Southern Dental Association, at Louisville, Ky., Aug. 29, 1888.

BY D. R. STUBBLEFIELD, A.M., M.D., D.D.S.,
OF NASHVILLE, TENN.

It does not require a Methuselah to look back to the birthday of Dentistry. She has made such rapid strides forward among the sciences, that, though comparatively young, she demands and receives recognition at the hands of the most erudite. Her ranks are filled by all kinds and nationalities of men, who have all varying degrees of natural fitness. But there was a time when this Cosmopolitan condition did not exist. Then the field was new, and filled almost entirely by uneducated men. There were, however, a few daring souls, who appreciated its importance and who felt an impulsive urging from within of a bias for its special duties and demands. They were the self-elected leaders of a forlorn hope, as it were, and did not expect much but hard work and poor appreciation of their services. But like Gideon's little band, they were filled with that indomitable determination to succeed that almost always wins the battle, tunnels the mountain, or gains the victory of any kind. Conversely to a survival of the fittest, they were the fittest, volunteering themselves to do or die in a chosen life-work.

The point I mean to make, is, that each candidate for the then questionable honor of being a dentist was, by reason of his self-election, generally equipped with a special aptitude for dentistry. There were exceptions to this general rule, doubtless, but they were only sufficient to prove the rule, not invalidate it. The outcome was so uncertain that each applicant for the then questionable honor, determined his fitness by a thorough investigation of his own powers, and then fully consecrated himself to his work. Each

filled his own proper niche in life. Each had a single purpose and was devoted to his cause. Each was willing to work in the very face of poor opportunities to learn, and poorer facilities with which to work. It was by dint of effort often repeated, and against failure as constantly recurring that success was at any time to be achieved. General education was rare, not the rule. Professional generosity was not born, and narrow-minded jealousy stood ready to kill the inquisitive learner. And it was not strange that each was so niggard with his hard-earned store, when we remember the daylight was not broad, but only the dawn threw its uncertain beams upon them. Our Pilgrim Fathers constantly carried their arms against the ever possible attacks of the destroyers; so, these, our professional fathers, guarded their small secrets and jealously kept them against the treachery of others, as they understood it. To be sure, it is not our way, but the customs of that day and this differs widely, and the sun of professional generosity had not dispelled the mists and fogs of ignorance that still obscured the landscape. In the light of the present they appear almost contemptible, and would be so, but for the extenuation, found easily in their different surroundings, which puts them within the pale of a generous charity. Let him, who would have been better under the circumstances that enthralled them, cast the first stone. I do not condone the fault, but I demand, a fair and right, considerate, not to say lenient, judgment for the doers.

And yet they need no defender. They did too much, in the very face of confessed disadvantages, to make the foundation upon which we of to-day stand, for us to deny them credit, or refuse to be grateful. The perfection of an invention is certainly very commendable, but while we honor the perfecter, we must not lose sight of him who conceived the idea from which it grew. Those honest-hearted ones held firmly to their convictions, and dared to promulgate them with their whole lives. They irresistibly command our respect. The world in its ignorance denied the necessity for their work and refused, except from the direst need, to allow them a chance to prove its value. Against the tide of these and all other opposition they urged the bark of dentistry into the haven of respectable recognition. It was a struggle, in effect, like that of the Colonies for Independence, against Tory doctors within the scientific world, and all the opposition from without combined. We have much for which to thank these foundation builders of the past, and we would be recreant to all professional heredity to refuse it. They developed appliances; we use them. They founded colleges of special learning; we are the learners. They questioned all methods and put infinite pains upon each; we are easily able to select the best for each case. They were

the garnerers; we the feeders that live upon their grain. Thus in all things the planters of yesterday feed the open mouths of to-day.

The dentists of to-day are the legitimate result of their determined adherence to principle. We stand so nearly related to them that we are necessarily the objects of their benefactions. We deserve no special credit for being even better than those of yesterday, for we can easily obtain the benefit of their work without a tithe of their labor. The sun of scientific enlightenment has revealed the fact, now fully recognized and conceded by the scoffers of the past, that dental science is necessary to the world, and the profession itself is just as reputable as any of the so-called "learned ones"—that is, in fact, one of the learned ones. The world admits that dentistry is a branch of the general healing art, without reference to its being or not being a specialty of medicine, and as such is entitled to all consideration. I cheerfully give the meed of praise to the dentist of yesterday, who, as he was in many instances uneducated, suffered from a narrow view, yet who carried within him the sign-manual of the Creator, manifesting itself in a special aptitude for the work. We, of to-day, do not flatter ourselves unduly by claiming that, with like careful selection, and better facilities for preparation, we can show greater advancement. But there is a trouble engrafted on us as a body professional, the consideration of which brings us to consider the dentist of to-morrow, namely, that the painstaking, introspective, self-examination, is not practiced in the selection of dentistry as one's life-work, as it was formerly done. It is too often the case that the idea of great emolument (?) proves the allurements, and the question of natural fitness is not even considered, much less settled. In other words, too many men are dentists (so-called at least) without self-election, in the sense of being naturally fitted for the work. One becomes a dentist because his father was a dentist, and he loses sight of the fact that heredity has stamped him his *mother's* boy; another becomes a dentist because a boy friend, who is unusually well fitted for it, is succeeding, although he may be entirely incomparable to his friend.

Dentistry now on a plane with other professions, must expect to suffer like them from the entrance of ill-advised votaries, enticed by adventitious inducements. It is an irrefutable fact that men are to-day forging ahead in the professional world by dint of main strength, where pride and intelligence are backed by fair cultivation, who would evince the grandest human ability in other vocations. It is a pity that inherent power should be misapplied. This could not always be prevented, but judicious selection, based upon mature consideration of character, should be the highest duty of parents. The pride to be this,

that, or the other, developed prematurely in a child, should be most sedulously avoided. Too much care can not be expended to ascertain the trend of the composite inheritance of a child. Pride of station and ancestry should be overcome in the all-important selection of a thoroughly congenial and compatible life-work. The most earnest scrutiny should be kept upon the formative forces bearing upon the child, so that they are not allowed to prove deformative processes, to warp a splendid success into as splendid a failure. The children of any profession are the natural recipients of any hereditary qualification for that profession, but we must not lose sight of the fact that the flow of hereditary is deflected and often changed entirely by the other side of the family. Hence, no invariable rule can be set to govern people who are not invariable. All of Phrenology may not be true, but enough to prove its general truth is found in human faces, built upon substantially the same anatomical bases and with parts that differ but slightly, and yet how different! None can doubt that different men have different qualities of mind as well as different faces, and that, therefore, they are better fitted to pursue some profession than any profession, to advantage. And yet, there is a general intelligence that enables some to follow almost any profession with credit, when faithful application is made. Such men may be thrown out of the channel best suited to them, and, still, against a natural bent, they develop success out of failure. None will dare to deny, however, that they would have done more, gone higher, or reflected greater luster on themselves in that calling that satisfied their whole nature than the work in which they had been perfunctorily engaged. If this is true, then the special work of dentistry offers the best field for some of the diverse minds of the world.

These very ones I commend, out of which to make the dentists of to-morrow. They are Heaven-elected dentists, if they properly qualify themselves to discharge its obligations.

The profession should demand three things to be done, one by them, one by itself and one by the schools. *First*, demand that a broad foundation of primary education should be laid, as preliminary to all other intellectual preparation. I go back of professional training in this and demand the same educational qualifications that the most learned profession ever demands. To prepare for law, they search all fields of educational lore, drink at all fountains of knowledge, and then put on a capstone of law. Just such a course, I claim, is best, if not always possible, for a dental student, and even more important, since the issue of life and death is, at times, in his hands. More is demanded of the studenthood to-day in all branches than ever before, and dental students must expect exactions commensurate with any other. Minds trained primarily and cultivated

persons, added to that trend of character that is the natural qualification, should be considered the *sine qua non* for correctly prepared dental students. Trained minds, that they may bring skillful intelligence to work out the conceptions of our high and progressive science; and cultivated persons, because our intimate personal associations demand that we be agreeable in necessarily painful duties. Such only would rise to the highest conceptions of our future. The beginners are on an average too crude from which to obtain the best results. They deem themselves well qualified to meet all requirements, when they decide to honor our profession with their patronage. The will is essential, but not all-sufficient. The day has come when better methods must prevail. Years ago, it was excusable to commence the study of dentistry without a proper foundation, but I insist that such a course is not up to the requirements of the times. A log cabin or a wigwam might be built upon the level earth, but a Washington Monument, or a Liberty Enlightening the World, must have a deeply laid and a well constructed foundation. Dentistry of to-morrow must over-top dentistry of to-day, and the basis must be deepened and broadened as the top goes upward. To do this the profession must awake to its responsibility and actively demand of our dental schools that they shall be more exacting as to a suitable preliminary education of their matriculates, and that they shall provide the means necessary and demand of their students a broader and more thorough knowledge of the fundamental sciences of medicine and surgery, before graduating them as Doctors of Dental Surgery.

Second, one by itself, and that is to establish a higher, better moral tone. The old idea that what was good enough for my father is good enough for me, must be supplanted by a more progressive, a more enlightened view of our calling, and the essential factors that constitute its higher standard. Such a revolution can not be accomplished in a day. Harvest is always preceded by a preparation and proper seeding, and a long time of patient waiting. But it ought to be done, it must be done, if we intend to rise with the tide of the general progress of the hour. Each dentist must become a radiant center of elevated moral tone, be the circle that surrounds him great or small.

Third, one by the schools, which must assist by a sensible elevation of the standard for entrance, a judicious extension of curriculum, and a more rigid demand for thoroughness before conferring degrees. Cast iron regulations can not avail, because the modifications at any point are not identical or comparable to those at any other point. Ends must be aimed at; means will take care of themselves. Let the sentiment be unanimous and utterances conform to it. The moral backing

thus developed will engender courage to begin the revolution. Be assured, it can not be wrought by chance, and indifference will result in forging more indissolubly the fetters that bind us to the traditions of our past. Schools can not do more than reflect the impress of the profession in the aggregate, as seen upon the collected pupils from all sides. Let every dentist constitute himself a committee of one to properly prepare one student. The great rolling river is just what its tributary springs make it, and dentistry will be elevated or depressed by your efforts and mine. It behoves us to rise to the emergency and do our best to discharge the obligation that we assumed in the marriage vows of our high calling. It is unquestionably essential that the schools shall be more thorough, but our duty lies back of their work. We have one responsibility and we must act, we must work, or die out of the way of those who will.

MEDICAL PROGRESS.

EFFECT OF COFFEE ON THE URINE.—DR. DUMONT, of Louvain, has undertaken a series of researches on the effect of coffee drinking on the urine, from which it appears that, though the diurnal quantity of urine is not seriously interfered with, the composition undergoes a very decided change. Dr. Dumont kept the subjects of his researches for some days on ordinary diet, the constituents of which were determined. During part of the time only was coffee added, the quantity being three cups—corresponding to about two ounces of roasted coffee—per diem. By regular and careful analyses of the urine, it was found that during the days when coffee was taken the urea passed was increased by about seventy-five grains. The effect on the urea was produced immediately the coffee was commenced, and as soon as it was omitted the quantity of urea returned to that which it had exhibited previously.—*Lancet*, Sept. 29, 1888.

ARSENIC IN RHEUMATOID ARTHRITIS.—DR. WILLIAM OSLER recommends Fowler's solution in initial doses of five drops three times a day in the treatment of rheumatoid arthritis. This dose is gradually increased to the limit of tolerance and then held there, the effects of the drug being carefully watched.—*Medical Record*, November 24, 1888.

ANTIPYRIN IN LARYNGISMUS STRIDULUS.—MR. MONTAGU PERCIVAL, of Waratah, Tasmania, reports successful results in 24 cases of laryngismus stridulus treated with doses of from 2 to 5 grains of antipyrin every hour. The cases were due to sudden changes of temperature, with damp winds.

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SATURDAY, DECEMBER 22, 1888.

"PENNY WISE, POUND FOOLISH."

We hasten to endorse the *Peoria Transcript's* proposition that the general assembly promptly abolish the State Board of Health. Founded originally for the promotion of the sanitary condition of the people it has lapsed into a mere technicality of medical practice and a mutual protective society for the profession of Illinois. No valid objections could be advanced against the Board of Health being operated in the interest of the medical profession if it were not maintained at the expense of the tax-payers. The cities are governed by sanitary regulations of their own, while in the country districts any justice of the peace is empowered to act in behalf of the protection of public health. The Board of Health seems to be an unnecessary institution and one from which the people derive little if any benefit. As its maintenance is quite expensive it should be altogether abolished in the interest of economy.—*Bloomington* (Ill.) *Eye*.

Were Cicero living at the present day he would not have to go far to find journalistic Catalines to whom he could say: *Quosque tandem abutere nostra patientia, O Catalina!* The *Bloomington Eye* is sadly in need of a pair of spectacles with which to read the act of Legislature creating the Illinois State Board of Health, and that will enable it to see what the Board has done and is doing. The Board was created for two objects: 1. To promote and take care of the sanitary condition of the State of Illinois. 2. To regulate medical practice in the State.

It has been but a few months since we showed (THE JOURNAL, June 9, 1888, p. 719-720) that the tax-payers of Illinois are fully reimbursed for all the expenses of the State Board of Health by what the Board saves to the State in its sanitary

work; that in one instance, the small-pox epidemic of 1880-82, the Board caused a saving, outside of Chicago, of 1,517 cases, 320 lives, and more than \$2,790,000 (exclusive of actual life-value). Dr. Farr estimated each life as worth \$795 to the State; so that the saving in life value was \$254,400; and we thus have a total of \$3,044,400 saved by *sanitary work* at one time, not to speak of what has been done since 1882. In regard to the regulation of medical practice, careful estimates show that since the Board has practically cleared the State of itinerants, quacks, and charlatans, two years ago, \$450,000 have been saved to the people of the State.

We may say, then, that the case stands as though the State Board of Health had deposited with the State Treasurer \$3,494,400, from which to draw interest for its maintenance. At a rate of interest of 3 per cent. this would give the Board \$104,832 annually, which amount, we may remark, the Board is *not* spending. The expenditure of the Board from the State Treasury for the fiscal year ended September 30, 1888, was the small sum of \$8,559.25. The State Railway Commission spends more than this and does far less work. If the *Bloomington Eye* cannot see this we would advise it to consult an oculist and an arithmetic. If the people of Illinois are unwilling to pay less than 3 per cent. on all moneys actually saved to them, they have not the business tact and foresight for which we give them credit. The house to house inspection and State sanitary survey, which have been carried on since 1884, have done a great deal towards preventing disease and reducing the death-rate of the State. If anyone can make out a balance in favor of the medical profession on account of a board of health, we shall be glad to see how it is made. How much money was put into the pockets of the physicians of Illinois when the State Board prevented 1,517 cases of small-pox?

In the yellow fever epidemic of 1878-79, the action of the Board saved thousands of dollars to the State; and with the Sanitary Council of the Mississippi Valley it has done a great deal in keeping yellow fever out of this section. It has done efficient work in preventing the introduction of cholera into the country. Since the organization of the Board epidemics of scarlet fever, diphtheria and typhoid fever have been less prevalent, and when outbreaks of these dis-

eases have occurred, they have been limited, to a great extent, through the Preventable Disease circulars of the Board. It is but a few months since the Secretary of the Board refused to quarantine against yellow fever refugees at Cairo, when quarantine would have been wholly unnecessary, and thus saved thousands of dollars to the Contingent Fund of the Board, and from \$50,000 to \$100,000 to the business interests of the State. The Illinois State Board of Health has also been active in securing the coöperation of the various State Health authorities in preventing the introduction and spread of the various epidemic diseases.

Admitting for a moment that one of the functions of the State Board of Health is that of "a mutual protective society for the profession of Illinois," we may ask if certain facts do not justify State protection of the profession. Is there any other profession that gives its time, skill, and services so freely, and so gratuitously to the people of the State, as the medical profession? Who gives gratuitous service to the poor man, in and out of the hospital, newspaper editors or doctors? Who is most frequently robbed of just earnings, the merchant or the doctor? Who gives gratuitous advice most frequently, thus cutting off his own income, the lawyer or the physician? When an epidemic is raging, who so often gives time, health, and even life to aid the sufferers and stay the disease, as the doctor? Can the editor of the *Peoria Transcript* and *Bloomington Eye*, tell us of a legal dispensary, to which people go for free advice when they are well able to pay for it? Can they tell us of a clothing, a food, a fuel dispensary to which dishonest, well-to-do people go under the guise of objects of charity and obtain relief for which they are fully able to pay?

The suggestion that "any justice of the peace is empowered to act in behalf of the protection of public health," is one that no one in full possession of the common mental powers of the human being would make. Why not leave health matters to the shoemaker, the coalheaver, or the editor of the country paper? Either one knows as much about health matters as the justice of the peace. And why not give over the entire management of the asylums for the insane to the County Clerks, the State Railway Commission to plumbers, and the financial manage-

ment of the State to the Sheriff of Sangamon County?

After all, it is not difficult to account for such expressions of irresponsible opinion as those quoted. The State Board of Health, by driving itinerant quacks and Indian doctors from the State, has reduced the income from advertisements of some of the newspapers. *Hinc illæ lachrymæ.*

SANITARY INFORMATION BY COMPARISON.

DR. HORLBECK, of Charleston, has recently visited several of the large Northern cities gathering data for a report to the Charleston Board of Health on the sanitary system of the city. This method of obtaining information in regard to health and sanitary matters is certainly to be commended, as likely to be much more productive of good results than information acquired from books and printed reports. And since, according to the recent reports of the Registrar-General of Great Britain, there has been so much improvement of late years in the sanitary condition of Great Britain, notwithstanding the crowded condition of the population, it is very probable that it would be productive of good results if some of our health officers would pay an occasional visit to the Victorian Kingdom, and see how it is kept in such a healthy condition.

Not to speak of the many matters, methods, and institutions of sanitary interest that may be found on the Continent of Europe, it is not too much to say that any State would be largely the gainer that would send an intelligent health officer on a one year's commission to England and Scotland to study their sanitary institutions and methods. At this distance we are likely to think that a visit to one or two cities would be sufficient. Such is far from being the case. One can find something new and interesting in sanitation in almost every city of Great Britain. The sanitary methods of Edinburgh differ from those of Liverpool, and those of Liverpool from those of Manchester. The sewage farms of Edinburgh could be compared with those of a few other places in Great Britain, and these with those of Berlin. The end is the same—the prevention of disease and reduction of death-rate; but the means by which the end is attained are often essentially different. Actual knowledge, gained by actual see-

ing and experience is always more valuable than that gained from reading.

The proof of what we say may be found in the enormous strides in the management of asylums for the insane, due in great part to actual comparison of methods in various institutions in all parts of the world. One or two thousand dollars, or even more, spent in such comparisons and observations, might be the means of saving fifty times the amount to a State or City in less than five years. The amount of money spent in this country, annually, upon useless experiments, because of ignorance of what has been done, and of ignorance of suitable methods and conditions for certain places. At best, health officers have far too little practical preliminary training, which is certainly as necessary for their efficiency as is hospital practice for medical students before they enter upon private practice.

EDITORIAL NOTES.

OPIUM SMUGGLING ON OUR NORTHERN BORDER.—A few days since a wagon loaded with 800 pounds of crude opium was seized and the driver arrested by United States Revenue Officers on the Dakota line west of St. Vincent. About the same time 476 pounds, prepared for smoking and packed in boxes, were seized at Denver. The boxes had been sent from St. Paul, marked "household goods" and consigned to A. Neilson, who was also arrested. Another large amount, valued at about \$20,000, was found by Customs Officers in a shanty near Port Hope, where it had been landed by a schooner from Sarnia, Ont. The man in charge of the opium in the shanty made his escape. These several seizures, added to the recent developments with which our readers are familiar, render it quite certain that an extensive and well organized system of opium smuggling has been carried on for some time through the British possessions and over our border at various points. The knowledge now in possession of the United States revenue officers will probably enable them to break up the illicit trade, and punish, at least, some of the chief offenders.

WATER-SUPPLY OF JERSEY CITY.—Sixty physicians in Jersey City have signed a report to the Board of Works, saying that the water of the city is good enough to drink. The Passaic River re-

ceives the sewage and street washings of Paterson, N. J., the sewage and drainage of Pompton and Passaic City, it is said, and the offal from slaughter houses, the waste from factories, and the drainage from the dwellings along the river. Several chemists have found the water of the Passaic River contaminated by sewage. The physicians of Newark (supplied with the same water) assert that the water-supply of that city is impure. The Croton water is much better than that supplied to Jersey City, and yet Drs. John C. Peters and Cyrus Edson say it is far too impure for New York. As a matter of fact, it would be far better if physicians were to trust to expert analyses rather than to personal opinions, possibly not well founded. No water is good enough to drink if it can be made better.

AN INCOMPETENT AND USELESS OFFICER is the present Coroner of San Francisco, if he may be judged out of his own mouth. The City Physician of San Francisco has recently resigned, and his letter of resignation was uncomplimentary to the Sheriff and Coroner. The Coroner stated at the meeting of the Board of Health that time and time again he had shielded the City Physician "to prevent the too evident fact of his incompetency from showing itself to the public." If the Coroner spoke the truth he is an unfaithful officer; if he did not speak the truth he is equally unworthy of confidence. In either case the city would probably be the gainer were he to resign. At best, the sooner the non-medical coroner becomes a thing of the past, the better for all concerned.

SANITATION IN INDIA.—During the 20 years ending 1885, says Surgeon-General G. Bidie, the deaths from small-pox in India averaged over 33,000 per annum, and for every death about 10 persons had the disease and suffered mutilation. In the Madras Presidency the four great destroyers of human life are cholera, small-pox, fever and bowel complaints, the average number of deaths from these diseases alone being about 339,000 every year. In the 50 years ending 1886, the total losses to England, France, Germany, and Austria on battle-fields amounted to but 386,000, against the annual 339,000 of the Madras Presidency from disease. The country is studded by towns and villages that have been rendered terribly foul by the filth of centuries.

DR. H. G. WILDMAN, of the firm Wildman and McCoy, of this city, whose license to practice medicine had been revoked by the Illinois State Board of Health on account of alleged unprofessional practices, took an appeal to the Governor of the State, who has now reversed the decision of the State Board. Would it not be a benefit to all parties to have the Chicago Medico-Legal Society, composed of intelligent medical and legal gentlemen, fully discuss and endeavor to define the proper powers and duties of the State Board under the State law for regulating the practice of medicine? Does the Board possess both legislative and judicial powers, or neither?

DISEASED MEAT AS FOOD.—The State Board of Health of New York recently received a communication from Monroe, N. Y., to the effect that pleuro-pneumonia had broken out among the cattle there, and that 150 cattle had been killed. The local health officer asked whether the cattle so killed should be allowed to go on the market as beef. An emphatic negative answer was returned to this part of the dispatch, and the officer was directed to prevent any such use of the carcasses. It is a commentary on modern methods of educating the people that health officers need ask such questions.

LARYNGOTOMY ON A HORSE.—Dr. S. W. B. Werntz, a veterinary surgeon of Philadelphia, recently performed laryngotomy on a valuable horse, for the condition known as "weazing." After the wound was closed the horse took food and water without difficulty, and at last accounts seemed to be doing well.

A NURSE'S HOME has been opened in Philadelphia, having been established by the managers of the Pennsylvania Hospital. The Home affords accommodations for twenty-five nurses. The rooms are well fitted up, and the nucleus of a library has been formed.

AN ANATOMICAL SOCIETY has been organized by the students of the University of Maryland, DR. J. EDWIN MICHAEL being the President. The University Museum is the place of meeting and study.

DR. J. B. BOWEN, a prominent physician of Bridgeton, N. J., died on Dec. 12. He was 50 years of age, and was graduated from the University of Pennsylvania in 1861.

SOCIETY PROCEEDINGS.

Gynæcological Society of Boston.

Regular Meeting, May 10, 1888.

THE PRESIDENT, HORACE C. WHITE, M.D., IN THE CHAIR.

DR. SAMUEL N. NELSON exhibited

AN EXTRA-UTERINE FŒTATION,

and the pelvic organs of a patient who had died from abdominal hæmorrhage due to rupture of the sac. On opening the abdominal cavity at the autopsy it was found to be filled with clotted blood intermingled with the coils of intestine. In the right iliac region was the ruptured sac from which the blood had escaped. This was found on dissection and removal to have originated in the fimbriated extremity of the right Fallopian tube. The sac was about $2\frac{1}{2}$ inches in diameter, and contained a foetus about 4 inches long. The uterus was enlarged, the cavity measuring 4 inches, and the anterior wall on section showing a thickness of 1 inch, including a well marked decidua, which was $\frac{1}{4}$ inch in thickness. The left ovary and tube were normal.

DR. HENRY O. MARCY: The history of the case from which was removed the specimen just shown was very interesting. Mrs. X., æt. about 35 years, was rather fleshy, with thick abdominal walls. She was the mother of seven children, but had not been pregnant for seven years, since which time her menses had been irregular. The patient suffered from indefinite abdominal pains with nausea, with sensation of sinking at the stomach. There was a slight uterine flow which, for the most part, confined her to the bed for four weeks prior to death. During this time she steadily lost flesh and strength. The breasts were soft and flaccid. The abdomen was slightly tender on pressure. The uterus was somewhat enlarged and slightly retroverted, but easily movable. There was no enlargement to be felt about the uterus by the most careful examination, and extra-uterine fœtation was dismissed from the discussion. She had seemed gradually to improve until the night before death, when she was seized with most excruciating pains resulting in collapse. She was seen by Dr. Nelson and me a little before her death. The cause of the extreme condition at that time was plainly to be attributed to hæmorrhage within the abdominal cavity from unknown cause.

DR. LEVI F. WARNER: In these cases there is generally nothing that calls to the mind of the physician the real condition of things. Usually they are not suspected. Once Dr. Hitchcock did suspect the condition, and he saved the patient's life by having everything in readiness for opera-

tion. In a certain case coming to my knowledge the doctor aspirated and withdrew 2 ozs. of fresh blood, and it was called an hæmatocele by an expert. The aspiration was continued until the woman died. Here the doctor was thrown off his guard, for the woman was 42 years old; she had been married twenty-one years and had never before been pregnant. She was in good general health, and was having excessive flooding.

DR. MARCY: I have seen two other cases. Mrs. M., æt. about 30 years, had been married five years and was never before pregnant. She was a delicate girl, had menstruated with difficulty but somewhat regularly. Five months previous to death she suffered from nausea and vomiting with general abdominal discomfort, bearing-down sensations, etc. She had flowed more or less continuously for five weeks. The uterus was somewhat enlarged, anteflexed, easily movable, not tender, os patulous, and the sound was introduced $2\frac{3}{4}$ inches. There was a slight fulness to the right of the uterus, which was slightly tender on pressure; this was supposed at the time to be a periuterine inflammation, and attributed by the patient to overstrain. She was sent to the country for recuperative rest. When seen six weeks later, the patient was sick in bed with symptoms of intestinal obstruction. There was a distinct tumor, size of double fist, a little to the right of the median line, above the pubis, tender and only slightly movable. The uterus was deflected to the left and was $3\frac{1}{2}$ inches in depth. I advised an exploratory laparotomy with the diagnosis uncertain. After consultation with an expert from New York City the operation was declined. Death occurred a few days later, and the autopsy exhibited a ruptured sac with the fœtus, 5 inches in length, lying free in the abdominal cavity. The coils of small intestine were agglutinated about the mass, forming a distinctive intestinal obstruction. The pressure from above had been sufficient to cause rupture of the sac, and its contents emptied into the abdominal cavity. Peritonitis supervened, ending in death. Dr. Marcy exhibited the specimen, together with longitudinal sections through the entire uterus, which were exquisitely mounted between glass plates made by Dr. Nelson, of Boston. They are sufficiently thin to serve for projection upon the screen by the stereopticon. The endometrium showed the decidua vera beautifully formed, with its enlarged utricular glands. The uterus was nearly double its normal size.

The second case I saw perhaps twelve years ago in consultation with Dr. Wellington, of Cambridge. A young colored woman was in collapse. She had not menstruated for about three months, and the symptoms of internal hæmorrhage were so clearly marked as to make the diagnosis of extra-uterine fœtation with rupture very probable. I thought laparotomy advised, returned for instru-

ments but, unfortunately, examined the authorities without finding a precedent for the operation; consequently I failed to do what my judgment dictated. Death occurred within twelve hours. The autopsy revealed a ruptured tube, with the lower abdomen filled with clotted blood. The sac was not larger than a hen's egg. I believe the operation would have been feasible.

DR. WM. G. WHEELER: A trouble in making the diagnosis in these cases is that flooding is frequently taken for menstruation. I know of one case in which the fœtus was three to four months old and the woman insisted that she had never been pregnant and that menstruation had continued up to a very few days. The sound introduced showed the size of the uterus to be increased, and this was all that could be made out. The woman died and a quart of pure blood was found in the abdominal cavity, together with the fœtus. Here hemorrhage was mistaken for menstruation.

DR. AUGUSTUS P. CLARK: At one time Dr. Thomas advocated electricity for these cases, but lately this method of treatment has been criticized. Can laparotomy be substituted and is it advisable?

DR. HELEN L. BETTS: What else would Dr. Wheeler do?

DR. WHEELER answered: A radical operation.

DR. MARCY: Dr. Thomas has reported seven or eight cases in which the diagnosis was clear, and electricity destroyed the fœtus, but the general feeling now is in favor of laparotomy. Dr. Gordon has told of an operation with cure. He opened, removed, and treated as if he had removed a tumor. There has been only one other case in the United States similar to this. If the condition of things is known do not wait for bad results. Probably the cases are more common than are supposed, for the doctors will not report their fatal cases. I know of a case where a woman died at the age of 80, and a calcareous fœtus was found which she had carried for 40 years. Also another case where there was a cyst containing fœtus bones. Here nature had acted as a surgeon.

DR. WARNER: I recall the case in which the fœtus bones were found after 40 years. Dr. Hitchcock made the diagnosis in Dr. Gordon's case and did the operation. If the diagnosis is certain in a given case we may probably save the patient.

DR. CLARK: Thomas does not say anything about the future of his cases. What is the use of destroying the fœtus? Septicæmia may supervene if rupture should occur later.

DR. SAMUEL N. NELSON made a demonstration of the

BEST METHOD OF STAINING TUBERCLE-BACILLI IN SPUTUM.

The reader said that his apology for bringing a subject not strictly gynecological before the

society was its manifest importance indirectly. The great advantage to be derived from the examination of sputum was to ascertain the presence or to determine upon the absence of the *bacilli-tuberculosis* before the physical signs of a cavity are apparent or distinct. In a well marked case where percussion elicits relative dulness and sometimes even flatness; when the respiratory sound, obtained by auscultation, is either bronchial or cavernous; and when the correlative vocal signs are present, viz.: either bronchophony with the loud and whispered voice or exaggerated vocal resonance; and especially where these are taken in connection with the cough and expectoration, the emaciation and other symptoms belonging to the history of the disease, then it is not necessary to go to an expert bacteriologist for a diagnosis; for he can only corroborate that which you have already made. When, however, the physical signs are not well marked, a careful examination of the sputum may make certain a doubt, and will guide you materially in the treatment of any given case and aid your prognosis.

A careful résumé of the various methods, with their modifications, that have severally been recommended by various authors for the detection of the *bacilli-tuberculosis* was then given. In general, they all have the same foundation, viz.: the fixation of a thin layer of the suspected sputum on a coverglass; the diffuse staining of this layer with one of the aniline dyes; the bleaching, which affects everything except the tubercle bacilli themselves, so that they are alone brilliantly stained and all else is colorless; and lastly, not important, but advantageous, the staining with a contrast color, which stains all other microorganisms, both bacilli and cocci, as well as the epithelial cells and pus cells.

The primary staining may be done quickly or slowly. When done quickly, the staining fluid must be boiled in contact with the coverglass-film; when done slowly the staining fluid is applied to the coverglass-film for 12 to 24 hours at the ordinary temperature.

After trying nearly all of the methods that have been recommended for the primary staining, the reader said that he preferred the rapid staining, using the formula of Ziehl:

R.	Fuchsin	1 part
	Alcohol	10 parts
	Carbolic Acid	5 "
	Water	100 " m

Instead of boiling this staining fluid in a watch glass with the coverglasses floating film downwards on the surface of the staining fluid, as is ordinarily recommended, the reader prefers to hold the coverglass film upwards with a pair of forceps, to place a drop or two of the staining fluid thereon, and to boil it by holding the coverglass over the flame of an alcohol lamp. After boiling it is allowed to cool.

For bleaching the reader uses nitric acid, diluted (nitric acid 1 part to water 4 or 5 parts), into which the stained coverglass is dipped (without washing) and at once transferred (without washing) as quickly as possible to absolute alcohol, through which a few passes are made, and then it is washed under the stream of the water bottle. The action of the acid changes the red color of the fuchsin to a nearly black color, but in the alcohol the red color is restored and then fades. Care should be taken not to bleach too much, for by the prolonged action of the acid and alcohol, even the tubercle bacilli themselves will yield their color.

When properly bleached the contrast stain, methyl-blue, is applied, in watery solution, and, after washing, the coverglass can be mounted and examined with the microscope, when *the tubercle bacilli, if present, are seen as red rods lying among other blue-stained elements*. A good $\frac{1}{4}$ or $\frac{1}{2}$ inch dry lens will distinguish them, but their characteristic formation can only be seen with higher powers, e. g., the oil immersion, $\frac{1}{8}$, $\frac{1}{16}$, or $\frac{1}{32}$ inch lenses, with an Abbé condenser, i. e., under the best conditions of illumination.

Instead of fuchsin, gentian violet may be used for the primary stain, and, in this case, vesuvin (Bismark brown) must be used as a contrast stain, instead of methyl blue.

Résumé:

- A. Stain with fuchsin.
- B. Bleach by dipping into diluted nitric acid (1 to 5).
- C. Finish bleaching in alcohol.
- D. Wash.
- E. Stain with methyl blue (contrast stain).
- F. Wash.

Then mount and examine with microscope.

After explaining the method of staining the *bacilli-tuberculosis* the reader demonstrated the method by examining specimens of sputum brought for the purpose by members of the Society. The result of the examination was, in each case, satisfactory to the one who brought the specimen, although certain test specimens were brought that were not supposed to contain any tubercle bacilli.

Philadelphia County Medical Society.

Stated Meeting, November 28, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D.,
IN THE CHAIR.

DR. WILLIAM HUNT read a paper on

DIABETIC GANGRENE.

There are about twenty pages of the great *Index-Catalogue of the Library of the Surgeon-General's Office* given to each of the subjects of

gangrene and diabetes. There are but two monographs catalogued, one by Giron, Paris, 1881, and one by Peyrot, a student, 1878, who reports, I think, thirty-nine cases; these are not in the College of Physician's Library. Then ten isolated cases are reported in the French journals from 1856 to 1868; most of these are in *L'Union Médicale*. I will give a brief summary of these cases:

1. A case of phlegmon and gangrene of the anterior and external region of the right knee. Free incisions were made. The patient was discovered to have intermittent diabetes. There was recovery from the local lesion.

2. A patient known to be diabetic had his right toe to slough; it was detached with scissors. From this he recovered slowly. He was placed on strict antidiabetic treatment, but was careless and the whole foot became gangrenous. There was great abdominal pain, and necrosis of the gastric mucous membrane was diagnosed; death speedily followed; no autopsy.

3. A diabetic of 60 years of age is reported, who died from extensive gangrene of the thigh and back.

4. A doctor, æt. 65, fell down from an attack of cerebral congestion; never sick before. Diabetes was discovered. This was on the 21st of the month; on the 25th great mortification took place involving the cellular tissue deeply, followed by death.

5. A man had a leg amputated for what was thought to be senile gangrene. He recovered slowly from this, then the other leg was attacked, first at the toes. He was found to be a diabetic.

6. Another diabetic is mentioned with spontaneous sphacelus of the right toe.

7. A colonel with his right foot gangrenous died of diabetes. Other cases are here and there mentioned with spots of gangrene.

8. A man of 70, after great pain, had gangrene, first in left toes, then in right. The disease was thought to be senile, but he was found to be a diabetic. The absence of ammoniacal changes is noted in this case, and the question is raised whether the urine of diabetics undergoes these changes.

9. A case of complete destruction of the plantar aponeurosis by gangrene in a diabetic is reported with recovery from that lesion.

10. A man of 55, cut his corn—gangrene followed and diabetes was present; he died. He had before this no symptoms of diabetes—in fact, was never sick. He went through troublesome family affairs, which he felt deeply, some time before.

These patients where the sex is given were males. Mental troubles are more than once given as a cause. Intermittence in the appearance of sugar is noted in two cases. In fact, in one of them, the interne tells his chief, that he (the

chief) had made a mistake. The interne had examined the urine when sugar was absent, but it returned in full. The majority of these cases were in the better walks of life. But the work worthy of a higher dignity of title than a monograph is by Marchal (de Calvi), Paris, 1864: *Recherches sur les Accidents Diabétiques et Essai d'une Théorie Générale du Diabète*. Some of his cases are among those quoted above. Marchal's book has reports of 133 cases of all sorts of what I may call extra lesions occurring during the progress of diabetes, collected both before and after the discovery. Of the 133 cases, gangrene *per se* occurred in fifty-seven. The seats of it were, in the lower extremities 35, lungs 7, hand 3, pleura 2, shoulder 1. Nucha (not ordinary carbuncle) 2, nose 1 (necrosis). Plantar aponeurosis 2, ribs necrosis 1, forearm 1, back 1, gangrenous plaques 1, although the latter are reported in several other cases. I shall not pretend to particularize these cases I refer any one interested to. My purpose is to show that gangrene in diabetes is something more than a coincidence. The extraordinary case No. 39, almost of itself sustains the position. A man of 58 years, came under observation. The case is given in detail and is thus summed up by Marchal. "Thus in the space of six years from 1850 to 1856, the patient was attacked successively with first, a necrosis of the first phalanx of the second toe, which was amputated; second, with a sphacelus of the whole foot and inferior part of the leg of the same limb, which was also amputated; third, with a skin gangrene of the other leg which gave place to a callous ulcer; fourth, with a gangrenous inflammation of the base of the great toe, which left a deep and intractable ulcer; fifth, with a sphacelus of the first four toes, which were also amputated."

Any fair-minded man would say that, if we can develop so much in such a limited range of inquiry and in such a short time, and then ask himself what might be found out by further inquiry, not only among ourselves but throughout the country, diabetic gangrene is certainly something more than a mere coincidence of the disease diabetes. I sent out a small number of inquiries to physicians and surgeons in our city, selecting those whom I thought would know most about the matter, and also made personal inquiries of some. The questions were: 1. How many cases of diabetic gangrene have come under your notice or treatment? 2. What was the social standing of the patients—wealthy, medium, poor, hospital, or private—their ages and sex? The next question would appear to be rather a side issue, but it was made, in passing, to ascertain whether what is almost universally stated about diabetes is legendary, or is the result of carefully collated observation; it also bears upon gangrene of the pulmonary organs—it is: 3. How many of *all* of your

diabetics had consumption, or died with it, and was there anything like gangrene of the lungs. I received thirty answers, including myself; of these, seven had seen no gangrene. They were Tyson, Longstreth, A. V. Meigs, Hutchinson, Packard, Sinkler, Keen. Twenty-five reported 64 cases, viz.: T. G. Morton 13, Da Costa 5, Hunt 5, Agnew 6, J. C. Wilson 3, S. Solis-Cohen 3 (two of them in consultation with other practitioners), Dr. Brush 4 (one case intermittent). D. F. Woods, J. H. Brinton, S. W. Gross, E. L. Duer, Murray Cheston, W. A. Edwards, J. W. Hearn, 2 each. John Ashhurst, Jr., Elwood Wilson, L. K. Baldwin, W. Osler, James Darrach, A. Fricke, W. F. Atlee, C. B. Penrose, J. H. Musser, W. B. Hopkins, T. K. Morton, 1 case each.

I was particular that the cases should be known by actual examination and record to be diabetic. Thus, Dr. Morton at first answered me that he had seen 20 or 25 cases, not knowing my object. I have no doubt that he has seen that number, for he and I have had our attention drawn to this matter for years, but he actually verified the 13 in his list. Dr. T. R. Neilson was certain he had two cases to report from the Episcopal Hospital, but he found no record of sugar, so I rejected them. I mention these facts to illustrate the care that has been taken. The ages, where given, were: 1 between 30 and 40; 2 between 40 and 50; 11, 50 and 60; 12, 60 and 70; 10, 70 and 80; 2, 80 and 90. One exceptional case of Morton's a diabetic aged 19, in whom gangrenous sloughing took place after a needle operation for cataract, is down, and one of S. Solis-Cohen's cases was a young female. Of the sexes given, 24 were females and 25 males. Of social standing, where given, 16 were wealthy, 23 medium, 9 poor, and of these 6 were in hospital. Dr. Brush reports a most interesting case of a female diabetic aged 40, a lunatic. She had large ecchymoses on her limbs which became gangrenous; she died. The autopsy revealed a gumma the size of a large pea in the floor of the fourth ventricle. The seats of gangrene, where reported, are: Lower extremities—below the knee, 37; thigh and buttock 2; nucha (not ordinary carbuncle) 2; external genitals in female 1; lungs 3; fingers 3; back 1; eyes 1. Had I allowed myself to include ordinary carbuncles and boils in the gangrenes, to which class they belong, the list would have been greatly increased.

How many diabetics have consumption or die of it? Marchal says he has known of but few diabetics to die of consumption, but he is rather inclined to adopt the general view. A pamphlet published at Oxford in 1745, called "A Mechanical Inquiry into the Nature, Causes, Seat, and Cure of Diabetes, with an Explication of the most Remarkable Symptoms," says, if the patient be "too far advanced by a neglect of proper remedies, the person so affected in reality dies of a consumption." Dr. Tyson has notes of 55 cases

in private practice since 1884. Of these, 18 have died, 4 of consumption. Dr. Longstreth says a very large proportion die of pulmonary complications called consumption.

Dr. A. V. Meigs has notes of 5 deaths from diabetes, none from consumption, nor does he know of any consumption in those diabetics who have passed into other hands, nor, as I understand, of any in his father's practice. Dr. James H. Hutchinson remembers 1 diabetic who died of consumption. Dr. Packard remembers none. Dr. J. Ashhurst, Jr., does not remember a consumptive. Dr. Sinkler: none of his cases died of consumption. Dr. Da Costa does not remember a case of gangrene of the lungs, but has seen a sufficient number die of phthisis as to believe in the generally held opinion. Dr. Agnew has seen no consumption, one of gangrene of the lungs. Dr. Elwood Wilson does not remember a death from consumption. Dr. J. C. Wilson cannot answer as to consumption, thinks it not so common as supposed; seen one case of gangrene of lungs. Dr. D. F. Woods has had no consumption deaths. Dr. L. K. Baldwin, one case complicated with consumption. Dr. Osler, two died of consumption, one of gangrene of lungs. Dr. Darrach, no consumption. Dr. S. W. Gross, none; Dr. Keen, none; Dr. A. Fricke, none; Dr. J. H. Brinton none; Dr. Hearn, none; Dr. Hunt remembers one woman who was said to have consumption with diabetes. Dr. Brush, one phthisis death, and reports one lady of 71, three of whose family had consumption; she escaped it. Dr. F. G. Morton, one; Dr. W. A. Edwards, none; Dr. Murray Cheston, six cases, no consumption; Dr. W. F. Atlee, none; Dr. T. S. K. Morton, none; Dr. Musser says he knows the cause of death in nine cases. None of phthisis.

Thus among all the diabetics noted by the practitioners mentioned, and we do not know how many are included, but certainly the 55 of Tyson, the 64 of my collection, the 9 of Musser, and 16 non-gangrenous ones specified by 7 others, in all 144, we find but 11 deaths from phthisis. And yet Dr. Thomas S. K. Morton in an essay on diabetes has somewhere picked up a statement, from an authority whose name he has missed, that 43 per cent. of diabetics are killed by phthisis sooner or later. Roberts, 1885, says that one-half of them die with cough, catarrh, phthisis, and other lung complications, when prolonged to the third year, and Aiken quoting him, evidently in mistake, says to first year. Dr. George B. Wood says, "In the great majority of cases the patients die of phthisis." Drs. Da Costa and Longstreth, whose opinions are entitled to great weight, make general statements in their answers; Dr. Longstreth cautiously stating it is called consumption. From a conversation with Dr. W. Pepper, who gives no return, he adopts the consumption view, and Dr. J. Cheston Morris coincides.

S. Solis-Cohen says: "I cannot find accurate statistics as to consumption. Think at least one-third of the cases that I have seen, died of pulmonary affections." Griesinger, quoted by Niemeyer, says "one-half of the cases die of phthisis." Watson says, "some think phthisis universal in diabetes, but it is not so." Flint, quoting Ogle, reports fourteen cases, with deaths from scrofulous or tubercular disease in seven of them. Niemeyer says "that pulmonary tuberculosis hastens the fatal issue." What one of latest authority, C. Hilton Fagge (1886) says, is important. "Diabetes is frequent cause of a phthisis (almost the 1745 expression) which is peculiarly pneumonic in character. Its relation to ordinary pulmonic disease is still doubtful," and after giving certain facts he says, "hence it supports very strongly the opinion that the pulmonary affection in the disease is not of a tubercular origin." He kept notes of the diabetic deaths in Guy's Hospital and in twenty years out of 40 such deaths, 17 died of phthisis. You will notice how indefinite and general some of the statements above given are, without figures to sustain them. Blau, in his review in the late number of *Schmidt's Jahrbuch*, already quoted as to gangrene under the head of "diseases of the lungs in diabetis," says, in substance, "that the question whether so-called diabetic phthisis is the same as ordinary tubercular disease of the lungs is only to be settled by the proved presence in both of the same bacillus." Authorities, Inmèrman, Rüttimeyer, von Merkel, and von Leyden, are quoted as having observed absolute differences between the two diseases both from examinations of sputa and also by post-mortem. A case is given in which during life the patient had all the symptoms of tubercular phthisis. Except that bacilli were not found in the sputum, and at the autopsy the appearances were totally different from those found in that disease, and these appearances are noted in the text. The bacillus tuberculosis was nowhere found. A case having almost the same post-mortem appearances as this one is reported by Da Costa, in the *Philadelphia Medical and Surgical Reporter*, vol. i, page 8, January, 1887. The bacillus, as in the preceding case, was absent.

This record, considering the large number of consumptives in communities like ours would seem to show that the cases in point are *consumptives with supervening diabetes, and not diabetics with supervening consumption*. I leave the question for wiser heads to determine. Diabetics die, as my inquiries and experience confirm, with coma, cedema of the lungs, and exhaustion.

I have nine cases to speak of, five of whom were gangrenous, and three rapidly advancing toward it when death overtook them. One was peculiar and unverified; all are dead; one was in medium circumstances, all the others decidedly

wealthy. The ages ranged from 50 to 93, four of them being above 70, five were women, four men. In none of them was the classical emaciation present at any time. The disease was intermittent in two. The urine in one of these cases would range as low as 1010 specific gravity, with slight traces of sugar, and then advance to 1030-1035 with evidence of abundance of it. I took a specimen of this low gravity urine to Dr. Casper Wister, of the Mutual Life Insurance Company of New York. He tested it himself and was much surprised, and concluded not to accept statements of "no sugar," founded upon specific gravity alone. Another case also ranged from low to high at varying times, but not so marked as the first. This teaches us not to be too sure in saying, as we all often do, "there's no use looking for sugar in that," when the gravity is 1020 and under. Austin Flint, Jr., reports a diabetic case with the gravity of 1011½. The seats of the gangrene in five of my cases were, foot and leg below knee three, thigh and buttock one, nucha (not ordinary carbuncle) one.

Gangrenes, as a rule, are generally of the soft or humid kind. This, however, depends much upon the part involved. Where the tissues are succulent, the gangrene will be also of that character; where they are composed mostly of skin, tendon, and bone, they will approach the senile gangrenes in appearance. The remark made by Holmes Coote is applicable. He, speaking of the terms used in the descriptions of gangrene in general, as dry, moist, etc., says, "when death of a part takes place rapidly, the vessels still contain blood and the usual fluids, and the mortified parts are moist and soft. When on the other hand, the death is slower, there is usually a deficiency of the supply of blood; the vessels become empty and the part hardens and withers." There is this distinctive difference between the diabetic and the senile gangrenes according to my observation. The former rarely or never present the clear-cut line of demarcation between the dead and the living parts that is characteristic of the latter. This fact, with a want of the decided dryness and shrivelling of the senile variety, should suggest the diabetic form, but in any case the urine should be examined.

I have this interesting observation to make about one patient: A lady, æt 93 years, who did not have gangrene. This past summer she was in more than usual good health. I know positively she had no diabetes until shortly before her death; not only from the want of rational symptoms, but also from recent examining of the urine. I went with her to Newport in June, and left her there. In passing through Newport in the latter part of July, I saw her; she was perfectly well, and her delight was to drive twice a day. I was at Bar Harbor in August, and received a telegram asking me to come at once to

see her at Newport. She was dead before I arrived, and I learned from Dr. Cleveland, of New York, who attended her, that she was sick but eight days, and had developed an *acute* diabetes, which rapidly proved fatal. I had no hesitation in saying, that had she survived the first fierceness of the attack, she would have had to contend with gangrene. The opinion was given, not because of her age, but because of the diabetes.

Sugar in the urine has been developed by falls upon the head, and also in certain forms of apoplexies, but I have just made a, to me, most interesting observation.

In January, 1885, a wealthy gentleman, a long-time patient of mine, of most vigorous constitution, then 76 years of age, had an apoplectic seizure, from which he reacted, and finally settled down into a chronic semi-paralytic. On the 9th of this November, 1888, in the evening, I was suddenly summoned to see him by his son-in-law, a physician. He was comatose, face very much flushed, temperature 103°, pulse 120, and had Cheyne-Stokes respiration. There was no increase of paralysis of the extremities. Basic effusion was diagnosed. Under treatment he improved, and was very much better by morning.

His urine during his sickness had been repeatedly examined, and, with the exception, at times, of slight traces of albumen, there was nothing abnormal. On my morning visit, mindful of the symptoms of the night before, I proposed an immediate examination of the urine. This was done, and decided sugar reactions were produced by fresh Fehling solution..

Here was auto-physiology. Temporary pressure upon, and disturbance of the respiratory centers, and also pressure upon the diabetic regions of Bernard. As the effusion disappeared with the mending of the patient's condition, the sugar has gone with it, and now the tests give no traces of it. It will be interesting in this case if the patient survives, to note both as to sugar and as to gangrene.

I had written thus about this case, when I had occasion to make another note. I saw the patient daily for four or five days, when it looked as though matters were about to resume their old course, and I made the next appointment for two days ahead. But on the 15th I was summoned again. The patient was in deep coma, breathing 60 per minute, pulse 150. *The urine gave sugar reactions more decided than before.* Respiration could be stopped by reflex at once—that is, by any peripheral irritation about the mouth or thorax. This would occur on an attempt to give liquids, then after a few automatic adjustments, the breathing would go on as rapidly as before. Within two hours death took place. There was no filling of the bronchi with mucus. The patient simply stopped breathing. Pressure on the pneumogastric centers was profound. It was a

quick and permanent application of the air-brakes.

In practice we all have our puzzling cases. A distinguished, wealthy lawyer was attacked with an obscure disease. It was rapidly fatal. Dr. James Darrach was the physician, and I was sent for in consultation. It is not necessary to give the details. I cannot remember whether the urine was examined; certainly, I think, not for sugar. Symptoms of sepsis were marked, and among the incidents there was enormous swelling of the abdominal walls, both anteriorly and laterally. I made free and deep incisions into the flanks, and from the cellular tissue mephitic gases and fluids, like those that flow from moist gangrenes, came in abundance. I think, in the light of what has been developed in my researches, that that patient died from an acute attack of diabetic gangrene.

There was no consumption, or even a suggestion of it, in *any* diabetic of whatever kind that I have seen, except the one I vaguely remember, which I have already spoken of as being in the hospital when I was resident. I now submit, from what we have heard, whether among all the gangrenes mentioned in books and indexes, viz., traumatic, hospital, senile, symmetrical, spontaneous, puerperal, visceral, infantile, congenital, cutaneous, mephitic, spreading, exanæmic, arterial, static, dry, wet, moist, humid, white, etc., the much-neglected diabetic gangrene should not be included? We have seen that *diabetic* gangrene makes, with good reason, higher pathological claims to notice than most of the kinds above given. I should not be surprised to find, after thorough investigation, that in *numbers*, in civil practice, diabetic gangrenes would be found to hold the second place, traumatic gangrenes, including those from frost-bite, burns, and scalds, only exceeding them.

A few remarks upon the proximate and remote causes of diabetes which also have a bearing upon the production of gangrene. We have seen that diabetes is no disease of the poor in general. Drs. Tyson, Morton, and Darrach will give you some interesting facts about this.¹ I also have a good instance to add, illustrating the enchantment of distance even in science. Last Sunday I was speaking with Prof. Penrose on this matter of the poor and the rich, when he said, "And yet

¹ In the discussion which followed this paper Dr. Tyson said: "In regard to the infrequency of diabetes among the poor no better proof could be given than in the fact that in the Philadelphia Hospital in which more than a thousand patients are present at one time, it will often be impossible for weeks to get a case for lecture." Dr. Morton also stated: "An inquiry recently made of the superintendents of our State hospitals for the insane shows that although more than twenty thousand patients belonging to the indigent class have been under the care of the present medical officers of these hospitals, there has not, it seems, been a single case of diabetic gangrene in the institutions at Harrisburg, Dixmont, Danville, Norristown, or Warren." Dr. James Darrach said: "Dr. Hunt has mentioned that diabetes is a disease of the well-to-do, and referred to the rarity of the disease in hospital patients and among the poor. This would appear to be corroborated by the statement of Dr. Jorda, who states that in an aggregate of 22,735 admissions into, I think, four hospitals in Lisbon, there was not one case of diabetes; and of 5,700 deaths in 1862, four only were from this cause."

I don't know, Hunt; you remember the cases that used to be in the hospital when we were residents, and the work done in studying them under Drs. Wood and Pepper?" I remember all that, but did not remember the number of cases. I kept my own counsel, and next day I went for the record. The number of diabetics, as such, that were admitted into the hospital during Dr. Penrose's residency, 1851-53, two years, were just *three*; so, in the lapse of time, much work over a few cases is translated into the same work distributed over many cases.

From 1842 to 1888 inclusive, a period of forty-seven years, *fifty-nine* cases of diabetes were admitted into the hospital, an average of 1.28 cases per year. From 1842 to 1848 there was not a case; from 1858 to 1869 there was not a case, and in the first part of this time the Pennsylvania Hospital was practically the only hospital in our city for the respectable poor to go to for treatment. Thus, from the wealthy and middle classes of this community, I have brought to light more than twice as many cases of diabetes, most of them recent, as have been treated in the Pennsylvania Hospital for fifty years.

Diabetes seems, in its affinities, to be more nearly allied to gout than to phthisis. One of Dr. Cheston's gangrene patients was a man over six feet high, weighing 250 pounds. He was a waiter in a private family, and surrounded with all the accessories of wealth. I could not establish that excess in the use of wine or strong drink had much, if anything, to do with the production of diabetes. A diabetic drunkard is rare; I have never seen one. I think, however, that over-feeding plays a much more important part as a proximate cause. Aside from the boulimia that is often an accompaniment of the disease, it will be found that most diabetics are over-eaters in habit. I know that most of my patients were, to say the least, good feeders, and some of them excessive ones, and one was noted in this way. Well-to-do people, in times of peace and plenty, eat too much. The laboring classes may eat as much in quantity, but they work it off. Excess in food clogs, excess in drink crazes; so the former habit has the advantage in morals, but which kills most is a question.

I shall only glance at the theories of diabetes. Faults of the nervous, vascular, and visceral systems have been, respectively by some, and *all* together by others, considered to be at the bottom of the trouble. I incline to deranged vaso-motor effects (stasis or paralysis of the vessels, with or without atheroma or arterial sclerosis) as most explanatory. What better fact could we wish to sustain this position than the influence of disease on virility, a condition almost absolutely dependent upon normal vaso-motor function? Men with diabetes are mostly impotent; Marchal says, always so. He gives some strange cases of marital in-

licities, such as unfortunate charges of infidelity by wives against their husbands, when really the poor fellows were helpless diabetics. One of these is described as a veritable athlete, and he was an example of the fact that in this disease great and peculiar strength in one direction may for a time coexist with great and peculiar weakness in another. The knowledge of diabetes is ancient, and, in looking over the old records I thought that I might stumble on one of diabetic gangrene, but in this I was disappointed.*

(To be concluded.)

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Nature and Origin of Tetanus—Compression and Costal Resection in Empyema—Unglazed Tissue Paper for Dressings—Disinfection of Instruments—Muscular Atrophy of the Limbs.

In my last letter I sent you a short extract of a note by Drs. Berger and Richelot on the contagiousness of tetanus. From a communication to the Academy of Medicine on the nature and origin of tetanus, it will be seen that M. Alphonse Guérin does not believe in the equine origin of the disease. He admits that tetanus is inoculable, but what the agents are that are inoculated has not yet been demonstrated. He says that one may inoculate fragments of flesh taken at the neighborhood of the wound which was the seat of tetanus, pieces of spinal marrow of the bulb, of cerebral matter, are equally inoculable. The blood alone is not. These experiments prove that there is a virus, but no one can say in what it consists. The transmission of tetanus by inoculation is therefore acceptable, but that which is not, is that the agents of this transmission are micro-organisms. That which is certain is that the cases of tetanus in the wounded dressed by the procedure of Lister, are extremely numerous. The agents of contagion would therefore be refractory to carbolic acid and to the other antiseptic agents. M. Guérin is disposed to think that this malady is engendered by a poison analogous to strychnine and to toxine of Brieger, which idea, he says, would be more satisfactory to the mind

* Coincident with the reading of the proof of this paper, I received (December 6, 1888) a copy of the Berliner klinische Wochenschrift, No. 47, November 19, 1888. It contains the first part of an article by Dr. Max Schüller, of Berlin, called "Ein Beitrag zur Kenntniss der phlegmonösen und gränösen Process bei Diabetes." The author also intimates that gangrene, etc., is more than a mere coincidence in diabetes. He says: "While many cases of glycosuria, as, for example, those following experimental researches upon and injuries of the central nervous system, have found an essential clearing up, the relation between pus formations, furuncle, carbuncle, gangrenous process, and glycosuria is still quite dark. The view that these cases are essentially only complications of an unrecognized diabetes has still its adherents. I now have nothing new to offer as explanatory, and will consider this part of the subject no further."

than micro-organisms. To show that tetanus is not of equine origin, M. Guérin supports himself on the opinion of different authors, and in particular on that of M. Manoury, a veterinarian of Chartres, who, of 150 cases of tetanus that came under his observation, had never treated two tetanic animals in the same form, and had never seen a single case produced by contagion in man. M. Guérin then asks how the cases of tetanus observed at sea and in countries where the equine race does not exist, may be explained?

At the same meeting of the Academy, Dr. Poilaillon, presented, in the name of Professor Dubreuil of Montpellier, a note, in which the latter vaunted elastic compression, combined with costal resections, in the treatment of empyema. The application of the compression is practiced in the following manner: The chest is surrounded by a Sayre's apparatus, except the level of a rib which had been resected. At this level, a tube is placed which enters the pleura and above the cotton wadding. The chest is then tightly surrounded with an elastic band. The compression is made only at the level of the part uncovered, the apparatus of Sayre preserving the other parts of the chest. Every day, before applying the elastic band, a cupping glass is placed on the opening of the pleura, by which means a small quantity of pus is obtained. The author concludes that, with this mode of treatment, the resection, which involves the ribs only to a very small extent, is certainly less dangerous than in Estlander's operation.

Dr. Bedoin has published in the *Union Médicale* an interesting paper on dressing with absorbent paper which is made of unglazed tissue paper, such as is employed for making cigarettes. These dressings are intended to replace gauze, lint, linen or cotton bandages, as being less bulky and less accessible to different septic germs than these latter are, and is also much less expensive. It may be employed with all the antiseptic precautions prescribed by Lister either in a dry or moist state. This paper is an excellent medium for most antiseptic remedies, and whenever indicated, may be prepared beforehand with morphine, belladonna, cocaine, iodine, etc. According to the author, the application of these dressings has been attended with excellent results in various cases, such as wounds, burns, blisters, affections of the skin and eyes, etc. Comparative experiments have shown that the absorbent property possessed by this paper lint is one-third greater than that of cotton lint. It is absolutely necessary to cover the dressings with an impermeable external covering.

Dr. Redard, in a note read by him before the Société de Chirurgie, insisted on the absolute necessity of disinfecting all surgical instruments and objects employed in dressing wounds. He considers that the methods generally employed

for the purpose are defective, for it is only by prolonged contact with the antiseptic substance that instruments and sponges, etc., can be rendered sterile. Disinfection by heat, says the author, is an excellent method, but all instruments cannot be exposed to flame with impunity, and their immersion is only efficient at a temperature of 110° to 120° and when the contact with the liquid is prolonged during three-quarters of an hour for sounds, trocars, forceps, and during ten minutes for bistouries. Glycerine and oil have certain drawbacks, the former emits a thick strong-smelling smoke when boiling, the latter requires an apparatus for regulating the temperature. Dr. Redard highly recommends solutions of chemically pure chloride of calcium, especially when mixed with glycerine, boiling at from 110° to 120° . The method of disinfection by steam at a pressure at 110° with Dr. Redard's apparatus, prolonged during fifteen or twenty minutes is very simple, practicable and infallible.

At the last meeting of the Academy of Medicine in November, Dr. Desnos, physician to the Hôpital de la Charité, read a note on a case of muscular atrophy of the four limbs of very simple evolution, which came on during pregnancy and consecutively to obstinate vomiting. The case was that of a young woman in her third pregnancy, very much anæmiated by previous hemorrhagic metritis and in whom, all therapeutic means having failed, premature labor had to be induced at the fifth month of her pregnancy. From that time, the atrophy made no further progress, it remained localized in the four members, but with the aid of electricity and hydrotherapy improvement rapidly set in and the patient is now considered completely cured. Dr. Desnos entered at length into the pathogeny of these accidents and directed attention to divers hypotheses the most plausible of which being that of a myelitis affecting the anterior horns of the spinal marrow the cells of which preside over the nutrition of the muscular system. A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Headaches and other Nervous Symptoms due to Functional Eye-troubles. The Death of Dr. Sands.

At the last meeting of the County Medical Association Dr. Oppenheimer, the well-known specialist, read a paper of much interest and practical value to general practitioners, his subject being, "Headaches and other Nervous Symptoms caused by Functional Anomalies of the Eye." The effect upon health of errors of refraction, such as myopia and hyperopia, he said, had been so extensively

discussed that the necessity for their correction was now generally recognized; and his object, therefore, was to direct attention to the functional errors only. Eye-strain, although frequently overlooked by the busy family physician, was a not uncommon cause of headache, and by its early recognition many a patient might be spared the fruitless use of a long list of remedies in the attempt to secure relief. A number of the best neurologists and general practitioners, however, had gradually during the last few years come to an appreciation of the fact that a considerable proportion of these cases of headache, neurasthenia, insomnia, etc., depend on some functional disturbances about the eyes; and it had been a matter of surprise to oculists even to discover how many of the merely functional derangements of the nervous system, seemingly unconnected with the functions of the eyes, could be relieved by the careful study and treatment of the muscular apparatus of these organs.

Before alluding more particularly to the various symptoms which he had noticed as existing in connection with muscular asthenopia, and which subsequently disappeared, completely or partially, under treatment directed towards the restoration of the muscular balance, he referred to some points in the anatomy and physiology of the ocular muscles, and called special attention to the fact that in all its actions each muscle was steadied and balanced by more or less action of the opposing muscle, and that all the muscles of the eyeball contributed to the steadiness of its motion and the maintenance of its positions. It was to be remembered, he said, that each eye has to be directed to a nicety in order that the image shall fall upon the most sensitive part of the retina, and that both eyes may see the same object, with the result of binocular vision, as it is called. It was also to be borne in mind that the tractor muscles of the two eyes are supplied by six different nerves, and that the failure or weakening of any one of these will disturb the harmonious working of both eyes. Hence it was a marvel, not that we sometimes have muscular insufficiencies and loss of balance, but that we ever have binocular vision at all.

A muscle was clearly insufficient, he went on to say, which could not hold the eye in its proper place against its antagonist and allowed this antagonist to draw the eye to its own side, thus causing a squint. But technically a muscle was said to be insufficient when it could do its work, but did it under such a strain as to cause unpleasant symptoms and sensations. Having described the method of testing for muscular insufficiency, and its variety and degree when present, with prisms, he remarked that the condition of the muscles naturally varied in the same individual at different times and in differing conditions of health. There was, so far as his experience went, no ob-

servable relation between the severity of the symptoms present and the degree of insufficiency; and some people went comfortably about their business with an amount of insufficiency that would drive those of a more nervous organization to distraction.

In most cases that had come under his observation there was some trouble of refraction complicating the muscular difficulty, and in quite a number of them, as he believed, causing it. The headache, which was perhaps the most constant symptom, was by no means confined to the frontal or temporal regions, as might be expected, but might be general, or possibly referred to the vertex or occiput. The pain might be constant, or come on with the use of the eyes, or perhaps only after the eyes had been used for some hours. In some instances it was of a neuralgic character and very severe. Another quite frequent symptom was inability, or loss of disposition, to use the mind; and, strange to say, patients thus affected are the ones most apt to complain also of insomnia. Dizziness, or some form of vertigo, was also a common symptom, and it was sure to be complained of where the muscles were barely able to maintain an equilibrium; so that the least lapse would bring on diplopia. In one case severe tinnitus aurium, in addition to headache and dizziness, was promptly relieved by the wearing of appropriate glasses. Those who derived great pleasure from reading were apt to be depressed on discovering that they were no longer able to use their eyes *ad libitum*, and this depression was likely to produce in persons of a nervous temperament all sorts of neurasthenic symptoms. A radical change was often observed in this class of patients as soon as they found that they could use their eyes with comfort again.

In regard to the treatment, Dr. Oppenheimer took a very common-sense view which commended itself strongly to those present, and he did not hesitate to express his pronounced disapproval of the teachings of Dr. George Stevens, the well-known champion of tenotomy. He quoted a paragraph from a recent article of Dr. Stevens in the *Archives of Ophthalmology*, the gist of which was as follows: If there is a lateral balance and a vertical balance to your test, but the outer muscles do not appear quite as strong as they should be, according to an arbitrary standard; and if you do not increase the strength of these supposedly weak muscles by practice of a few minutes at a time for several days, and do not succeed in awakening them either by resting them or letting prisms do their work for them—then an operation is undoubtedly permissible. If, said Dr. Oppenheimer, we remembered that this operation would be a tenotomy of the internus muscle, the muscle which of all others needed to be strong in order to converge properly, and that there was more or less convergence required for all distances within 20 feet (which meant, in a city, almost all the

time), we got an idea to what a dangerous extent a hobby could be ridden. In such a case he himself would say: If a weak prism, worn for a few days, gives relief, let the patient continue to wear it, and when it ceases to answer, increase its strength as required. So far from setting up an absolute standard for the strength of each set of muscles, and dividing tendons until this standard was reached, he believed it was as irrational to set up a standard of muscular power, and call deviations from this abnormal, as to set up a standard of weight for an adult man and call every one not coming up to this weight atrophic. He did not wish to have it inferred, however, that he did not tenotomize the internus for a pronounced insufficiency of the externus. He had certainly had some excellent results from doing this when he thought it really indicated; but he said he did not operate for ailments imagined by the patient or the physician, nor did he claim to make effectual cures of epilepsy or chorea by performing tenotomy.

Having given the details of his method of treating these cases of eye-strain for headaches and other nervous symptoms, he summed up the treatment as follows:

1. All hygienic and medical indications to be carefully carried out by the attending physician.
2. A most careful correction of the refraction and accommodation (which in itself is not infrequently sufficient to effect a cure).
3. Correction of muscular insufficiencies, begin with a less degree of strength than apparently necessary, and increased if this should prove insufficient.
4. Tenotomy, if prisms do not relieve, or if they cause too much discomfort of themselves.

And, finally, when the patient can use his eyes with comfort with the correction given him, I rest satisfied, and cannot think any operation justifiable under these conditions.

When it was necessary to use prisms of such high degree as to give the patient the uncomfortable sense of everything being convex or concave, he advised tenotomy, and in performing this he follows the method of Snellen; beginning at the middle of the tendon and gradually cutting outward as far as might be required. In the slighter grades of insufficiency he greatly preferred the use of prisms to tenotomy for the following reasons:

1. It was the easiest for the patient.
2. It was usually sufficient to restore the patient to the comfortable use of his eyes.
3. Restoration to perfect health and condition quite often restored the equilibrium of the muscles, and a tenotomy might under those circumstances incline the balance in the opposite direction. In this connection he said that he could not too strongly express his conviction that out-of-door exercise and all other hygienic and medical means to restore the general health are most important adjuvants to the special treatment.

The sudden death of Professor Henry B. Sands, the eminent surgeon, in the prime of his powers, was a great shock, not only to every medical man, but to the entire community here, where he was so widely known and so highly esteemed. On Sunday morning, November 18, Dr. Sands attended service, as usual, at the Broadway Tabernacle, and, after a hearty meal, started out with Dr. H. H. Smith to see a case of hip disease in Jersey City upon which he had operated three weeks before. He was apparently in the best of health, but on his return, while riding up Fifth Avenue in his carriage, with Dr. Smith, he seemed to be seized with a sudden sense of suffocation, and in less than three minutes had died in the latter's arms. In the meanwhile there had gathered at Dr. Sands home, in 33d street, a company of gentlemen, about forty in number, composed of physicians, members of the Sextet Club, of the Philharmonic Society, and other friends, to enjoy a musical afternoon; and their consternation may well be imagined when the carriage arrived with his dead body. It was at first supposed that the cause of death was apoplexy, but the autopsy, conducted by Drs. Delafield and Peabody, showed it to be the result of heart-failure. The funeral services were held at the Broadway Tabernacle, on the 21st, and were attended by the Faculty and students of the College of Physicians and Surgeons, with which he had so long been identified, large delegations from the Academy of Medicine and Medical Society of the County of New York, and a vast concourse of the general public including many of the most prominent citizens. The Rev. Dr. Wm. M. Taylor, pastor of the Tabernacle, pronounced an eulogy, and in the course of it he stated that Dr. Sands had in mind the erection of an operating theatre at Roosevelt Hospital. "Now that he is gone," said Dr. Taylor, "his brotherhood could erect no more fitting monument to the memory of an eminent surgeon than by giving to Roosevelt Hospital the addition suggested." Unlike the majority, perhaps, of the medical men of New York who have attained the highest rank, Dr. Sands was a native of the city, and this community, therefore, has all the greater reason to be proud of his illustrious achievements and to hold his memory dear. P. B. P.

The American Academy of Medicine.

Dear Sir:—Many members of the profession will be at one with the opinions expressed in the leader in last week's JOURNAL in regard to the American Academy of Medicine. In reading the report of the proceedings of the Academy in THE JOURNAL of Dec. 8, I was struck by several facts. First, the tendency on the part of members of that body to self-adulation. Second, the paucity of papers in regard to education. Third, the over-exclusiveness of the Academy.

I have watched the Academy for several years. My interest in it was first aroused because of its membership being limited to physicians that have taken the A.B. or M.D. degree in course. This, I admit, prejudiced me somewhat against the Academy, since I am so much of a heretic as to believe that a scientific rather than a classical education is the best preliminary to the study of medicine, notwithstanding Dr. George Jackson Fisher's statement that "The Famous Historic Masters of the Healing Art were men of Classical Education." Men of broad, classical and scientific, education have expressed their conviction that a scientific education is a better preparation for the study of medicine than a classical education. That a classical education was the best preparation a century ago may be a fact; but the argument is as to the present. Modern science is, we may say, but a little more than half a century old, and the conclusions in regard to what was will not hold for what is. Were Michael Faraday alive to-day, and an American physician, he would be ineligible to the Academy. Were Pasteur an American physician he might knock at the doors of the Academy in vain, for he has no classical education. The classical-education ideas of to-day are burying original investigators that might be, and retarding the progress of scientific medicine. To be an investigator—to be a Naturalist—the physician must be a student of nature, and the classical education is a fetter from which one attempts almost in vain to break loose. It drills the young and growing mind to accept as true what is seen in print, and to regard natural laws as analogues of grammatical rules.

We all admit that medicine is founded on scientific facts—not on classical facts nor on classical knowledge. It is idle to argue that a classical—Latin, Greek and mathematical—education is the best for training the mind. One that holds this antiquated opinion shows an unfamiliarity with the laws of the human mind, so far as known, and should study the matter before claiming consideration for his views. The position of the Academy, then, in excluding physicians with scientific degrees, but without the classical A.B. and A.M. degrees, is a false position, and one that must create a large amount of prejudice against the Academy. For example: the writer has the classical A.M. degree, and is eligible to membership in the Academy. He has never asked for admission, however, because he is aware of two facts: 1. There are better educated men, without any classical degree, and with scientific degrees, who cannot be admitted to the Academy. 2. It is a constant source of regret to him that he was forced through the stereotyped classical course, without adequate scientific training, when he felt, long before he studied medicine, that a good scientific course was the proper training for the study of medicine. He is still of the same opinion,

strengthened by experience and a knowledge of his really defective education; and to become a member of the Academy would place him in the position of believing what he does not believe.

One would think that a Society, the purpose of which is to assist in raising the standard of medical education, could employ its time better than in listening to papers on "The Causes and Prevention of the Opium Habit," "The Treatment of Uterine Diseases by other than Surgical Means," etc. The range of subjects connected with medical education, and preliminary education, is surely broad enough to allow the Academy to have an interesting meeting without troubling itself with questions of therapeutics. So far as the medical schools are concerned, there is pressing need for *practical* study, and Dr. Parvin may be congratulated as having read the only paper, at the recent meeting of the Academy, that has a real and logical connection with the subject of higher medical education. A few words in regard to practical surgery, or practical work in the clinics, would have been much more to the point than "A Few Words Concerning the Academy." The relations between scientific training and logical thinking are more to the point than "The Relations between the General Practitioner and the Consultant or Specialist." That there is a field for the Academy there is no doubt; but it seems that it spends too much time outside its legitimate field.

ARTIUM MAGISTER;

BOOK REVIEWS.

A SYNOPSIS OF THE MEDICAL BOTANY OF THE UNITED STATES. By J. M. G. CARTER, M.A., M.D., Ph.D., Sc.D., Member of the American Medical Association; the Illinois State Medical Society; the Chicago Medical Society; the Chicago Academy of Sciences, etc. St. Louis, Mo.: Geo. H. Field, B.S., M.D., Publisher. 1888.

This is a monograph of 176 pages, in good type and paper. It contains a carefully classified list of the plants and shrubs of the United States reputed to contain medicinal properties of some value; and the supposed properties of each are briefly stated. It contains a list of the abbreviations of authors, a table of orders, an index of both generic and common names, and an index of diseases. In the introduction it is stated that the medicinal plants of the United States embrace about 140 orders; 620 genera, and more than 1,300 species and varieties. The author has expended much time and labor in the preparation of this work, and it will be found very convenient and valuable for reference.

A COMPENDIUM OF DENTISTRY for the Use of Students and Practitioners. By JUL. PARREIDT, Dental Surgeon in the Surgical Polyclinic of the University of Leipzig, etc. Authorized Translation by LOUIS ORTORY, D.D.S., Lecturer on Physiology, Chicago College of Dental Surgery. With Notes and Additions by G. V. BLACK, M.D., D.D.S., Professor of Pathology, Chicago College of Dental Surgery. 8vo, pp. ix-229. With numerous illustrations. Chicago: W. T. Keener. 1889. Price \$2.50.

From the author's preface it appears that he regrets that the general practitioner so much neglects the specialty of dental science. He believes that the practicing physician should be acquainted with the indications for operations on the teeth, and that he should know enough of dentistry to be able to give advice or express an opinion in matters pertaining to the specialty. This book, then, is written in great part for the physician. The translator, as may be seen by comparing the original work and the translation, has done his work well. The notes by Dr. Black form a valuable addition to the work. The book is profusely and well illustrated.

BRYCE'S VISITING LIST AND POCKET RECORD, Good for any Month or Year. Edited and Published by C. A. Bryce, M.D., Richmond, Va. *The Southern Clinic* Print, 1888. Price, \$1.00, postage paid.

This is decidedly one of the most convenient and valuable of the many *Pocket Visiting Lists* to be found in the market.

MISCELLANEOUS.

THE HEALTH DEPARTMENT OF MINNEAPOLIS.—Health Officer Kilvington has directed a letter to the new members of the council, proposing a plan whereby a very material reduction can be made in the expenses of the health department. The annual expense of the department at present is \$19,760, distributed as follows: Health officer, \$2,000; assistant, a medical inspector, \$900; clerk, \$500; 13 ward health inspectors at \$720 each, \$9,360; quarantine physician, \$1,000; city physician, \$1,500; assistant city physician, \$900; police surgeon, \$900; two meat inspectors, \$2,700.

Dr. Kilvington makes several points as follows: That the present force of health inspectors is made up of men untrained and incompetent to perform the work required of them and that a small, but efficient force, can manage the sanitary affairs of the city. The special quarantine physician is absolutely unnecessary. He proposes that the city be divided into five health districts and a man for each district who shall be chosen by competitive examination. At present there are but two city physicians to visit and care for the sick over a territory of 53 square miles, which is a physically impossible task. He calls particular attention to the food inspection, which should embrace all kinds of provisions, but is now confined to the optical inspection only of meats. He would have a force of five nuisance and two inspectors whose duties

would be to inspect all kinds of food stuffs, and the investigation and abatement of nuisances under the control of the board of health. A professional chemist and microscopist should be engaged for the examination of foods and drinking water. Another important provision is that the city scavengers be placed under the control of the board of health, and that body have power to revoke their licenses for non-compliance with the sanitary regulations of the city. The disposition of garbage can be made self-sustaining under such a system. He estimates that the reorganization of the health office can be effected at the following figures: Health officer, \$2,000; five medical inspectors, \$1,000 each, \$5,000; five food and nuisance inspectors, each \$900, \$4,500; chemist, \$600; microscopist, \$600; office clerk, \$500; a total of \$13,200, and a saving to the city as it is now operated of \$6,560.

DISTRIBUTION OF CONSUMPTION IN NEW HAMPSHIRE.—The extent and distribution of consumption in New Hampshire are admirably set forth in a paper by Dr. Irving A. Watson, the Secretary of the Board of Health of that State. The prevalence and fatality of this disease are illustrated by a number of diagrams. From the figures quoted by the author of the paper, it appears that during the three years 1885-87 there were in the State 2,432 deaths from consumption. It is interesting to compare with this the deaths from other forms of disease. From heart disease there were 1,536 deaths; pneumonia, 1,526; apoplexy and paralysis, 1,421; old age, 1,347; cholera infantum, 918; cancer, 637; typhoid fever, 464; diphtheria, 411. From a careful study of consumption in New Hampshire for the past six years, but more especially from the registration returns of the years 1885, 1886, and 1887, the following conclusions are arrived at:

1. The disease prevails in all parts of the State, but is apparently influenced by topographical conditions, being greater at a low elevation with a maximum soil-moisture, than in the higher elevations with a less moist soil. The prevalence of other diseases also affects the death-rate from consumption.

2. That the season has only a small influence upon the mortality from this disease. The popular idea that the fatality is greatest in winter is shown to be erroneous, the greatest number of deaths occurring in May.

3. That the mortality is considerably greater in the female sex.

4. That no age is exempt from this disease, but that the least liability of its development exists between the ages of two and fifteen, and the greatest number between twenty and thirty. Advanced age does not assure any immunity from the disease, as is generally supposed, but the smaller number of decedents is due to the fewer living persons at that advanced period of life.

5. The death-rate from pulmonary consumption is relatively much the larger among the foreign-born.

6. The average death-rate from consumption for the years 1885, 1886, and 1887, is 12.86 per cent. of the total mortality of the State. In Massachusetts, for the ten years ending 1886, deaths from consumption averaged 16.10 per cent. of the total mortality; and in Rhode Island, for a period of twenty-five years, ending 1884, 16.30 per cent. This shows a greater freedom from the disease in New Hampshire than in the two States mentioned.—*Science*.

DISINFECTING LETTERS.—The *American Analyst* describes as follows the method adopted by the United States Government for the disinfection of letters coming from districts in which yellow fever prevails. Letters from the stricken section are fumigated in a novel way, so that there is little or no chance for the disease being brought northward. The letters are all stopped when they reach the quarantine lines. Each letter is put under a machine with a long arm attached, and this is provided with little teeth punctured at the ends. A powder that is used for fumigating purposes is forced through the arm and down

through the teeth. The arm comes down on each letter, and, while the little teeth are perforating the letter, the powder is blown in between the sheets, disinfecting the letter thoroughly. We had understood that after the perforations were made the letters were exposed to the fumes of burning sulphur. If the *Analyst* is correct in its statement, it would be a satisfaction to know what the powder is which disinfects the letters so thoroughly. So far as we know, there is no powder which has this power when applied in the manner described, and, until we receive further information, we shall look upon the whole process with distrust.—*Science*.

IN THE INTEREST OF THE INSANE.—A conference of the managers and superintendents of the New York State Lunatic asylums was held at the asylum in Utica on Dec. 7, in response to a call recently issued by President P. V. Rogers, of the Utica board of managers. The conference was intended to promote an interchange of experiences and the discussion of methods best suited to an enlightened administration of the several asylums, and in the belief that such a conference would contribute to the advancement and elevation of the standard of management in each of these State institutions. Superintendent J. B. Andrews, of Buffalo, read a paper on "State vs. County Care," of which the following is an abstract:

Every State should have a definite and settled policy regarding the care of its insane. As early as 1831, before there were any State asylums, a legislative commission recommended the erection of institutions of sufficient dimensions and numbers to accommodate all the insane. The convention of superintendents of the poor in 1855, passed resolutions that the State should care for all of its insane, and that none of them should be treated in county poor houses. Dr. Gray favored this plan. Dr. Willard, in his report for 1865 to the Legislature, of the investigation of the county houses, gave the number of the insane inmates as 1,300. Public sentiment was so aroused that provision was made for the erection of an additional asylum. Other like institutions followed in due time, but they have not kept pace with the increasing amount of lunacy, and there are to-day in the county asylums outside of the municipal institutions of New York city more than 2,500, almost twice the number reported by Dr. Willard in 1865. These figures show how far short we have come of the standard persistently advocated by the various official bodies of the State. Since their organization in 1867, the State Board of Charities has advocated that the State should assume entire care of the insane, and permissions to do otherwise were only intended to be temporary. The doctor gave clearly and at some length various reasons why the insane are better cared for in State institutions than is possible in county institutions. The chronic insane require a supervision and oversight which cannot be extended to them in association with other paupers. The sentiment for the last fifty years expressed by those in positions of authority has favored the policy of State care. There should be some definite policy adopted and carried out by the State. It is able to do it, and it is a duty which in justice it has no right to shirk.

The following resolutions were adopted:

WHEREAS, Unusual and universal interest has been awakened of late in regard to the care and custody of the dependent insane in the State of New York; and

WHEREAS, Such dependent insane have always been regarded as the wards of the State, and

WHEREAS, It would be prejudicial to the true interests of the insane to depart from this humane conception of their rights;

Resolved, (1) That it is the sense of this joint conference of trustees and superintendents of the State asylums for the insane, that the State should have a definite and settled policy with reference to the dependent insane;

2. That such policy should include as its most important and vital principle the care of all its dependent insane in institutions established and controlled by the State.

THE OFFSPRING OF RABID ANIMALS.—Some observations made by Dr. G. Zagari appear to prove that rabies is not, as a general rule at least, communicated by pregnant animals to their offspring. He experimented with guinea-pigs (six), rabbits (five), and once bitch, and tested the virulence in the thirty-two foetus removed from the body of these animals while suffering from rabies (which generally causes abortion at an early date). In no case was it found to be capable of producing rabies when inoculated; the amniotic fluid, the placenta, the liver, and finally an emulsion made from the whole body of a foetus were found not to be virulent. In like manner, the milk yielded by the bitch and by two rabbits were found not to be virulent. Dr. Zagari (an abstract of whose paper in the *Giorn. int. d. Scienze Med.* is published in the *Cent. f. Klin. Med.*, 1888, No. 48), considers that the negative results of his researches lends support to the theory that the virus of rabies exists in the nervous system and not in the blood.—*British Medical Journal*, Dec. 8, 1888.

DEATH BY A RARE ACCIDENT.—A little son of Dr. Mueller, of Germantown, was remarkably injured by the rib of an umbrella five weeks ago, and died on December 8. The lad at the time was returning from school, and one of the ribs of an umbrella he carried was loose and dangled. While playfully throwing the umbrella up in the air and catching it by the handle as it fell he missed once, and the loose rib ran up his nostril, causing his nose to bleed freely. On the same evening, after supper, he complained of pains in his head and was put to bed by his father. During the night his breathing was unnatural, and when examined by his father he was found to be unconscious. The physician applied all the proper restoratives without effect and, thoroughly alarmed for his boy's safety, summoned several eminent medical men, among them Dr. Agnew. In view of the history of the case the physicians decided that the rib had extended sufficiently far up the nose to penetrate the brain. After he had lain unconscious for several days an operation was performed, which only resulted in temporary relief.

AN EXPERIMENT IN HYDROPHOBIA.—A very interesting experiment is now being performed in New Jersey on a couple of thoroughbred dogs which were bitten by a mad dog in Philadelphia. The animals were bitten first in the morning at 9 o'clock and then again at 6 o'clock. They were badly lacerated on both the neck and legs. It occurred to a Philadelphia physician that it would be an excellent case for experimenting. The two bitten dogs have been placed in a kennel and yard built especially for them, and guarded in every possible manner against escape. They will be fed exactly the same as the other dogs on the farm; in fact, they will be treated in exactly the same manner as though nothing was expected. From day to day they will be visited by expert dog fanciers and physicians and any change will be particularly noted. Provided the dogs do not show any signs of rabies within a period of three months they will be set at liberty, as incubation is supposed to set in within ten days, but by keeping them under strict surveillance for three months a sufficient time will have elapsed for the determination of the experiment.

DIPHTHERIA ON STATEN ISLAND.—An epidemic of diphtheria which broke out some weeks ago in Tottenville, S. I., threatens to assume serious proportions throughout the island. The first case reported was that of the 5-year old child of Benjamin E. Streeter, proprietor of the West End Hotel, who died after a five days' illness. The disease speedily gained ground in the village. Case after case was reported, both among children and adults, and the efforts of the Board of Health to stay the malady have so far been fruitless. Eighteen new cases were reported at the beginning of the week of December 7, and most of the prominent families in the village have some dead ones to mourn. In one family eight children lie

dangerously sick. From Tottenville the disease has spread to Pleasant Plains, Elkinville, Garrettsons, Stapleton, Clifton, Tompkinsville and New Brighton. In these places cases are rapidly increasing. The schools are closed, and the churches will also be closed should the disease not abate.

FATIGUE FROM THE USE OF THE TELEPHONE.—At the meeting of the American Otological Society in Washington, Dr. Clarence J. Blake, of Boston, read a paper on the influence of the use of the telephone on hearing-power. He thinks that this influence must be injurious, because the extremely low intensity, as demonstrated by experiment, of the sounds to be caught from the telephone, compelled a strain of the ear which soon fatigued it, and made it especially liable to injury by the accidental sounds of comparatively high intensity which were constantly liable to be heard. Dr. C. H. Burnett said he had seen several patients who believed that the continued use of the telephone had impaired their hearing. Dr. O. D. Pomeroy gave the case of a patient who said the use of the telephone fatigued her very much, and she thought had made her decidedly worse.

A STATE BOARD OF HEALTH FOR GEORGIA.—DR. SIMS, the member of the Legislature from Lincoln, has in course of preparation a bill creating a State Board of Health. The bill will provide for a board consisting of five physicians in good standing, who will have charge of the quarantine regulations of the State, without, however, clashing with the authority of the local boards.

The measure is the result of a general discussion in the Committee on Sanitation and Hygiene, of the recent epidemic in Jacksonville and of the great variety of quarantine regulations in different parts of the State. One result of the creation of a State Board of Health will be to make uniform the quarantine regulations. The friends of the measure believe that the presence of a State Board will do much to allay the excitement incident upon epidemics.

AN ANIMAL HOSPITAL.—The Trustees of the University of Pennsylvania have determined to build a large hospital and stable for the treatment of diseases of dogs, horses, cows, and other domestic animals. There are more fancy cattle owned around Philadelphia, it is said, than about any other city except Boston, and some of the finest die from want of surgical care. A special department is to be devoted to the care of pet and sporting dogs. A well-known Philadelphia lady proposes endowing a department for cats. The Society for the Prevention of Cruelty to Animals and the Anti-Vivisection both oppose the project.

DR. CHARLES B. WRIGHT, a leading physician of Freeport, Ill., died suddenly of heart disease on December 12. He was born in New York in 1820. Besides being a successful physician he was educated for the law, and for five years filled with honor the office of County Judge.

DR. GEO. F. HUNT, of West Bend, Wis., died on Dec. 10. He was graduated from the College of Physicians and Surgeons of New York City in 1856. He was a State Senator in 1881-82.

WOMEN IN THE PROFESSIONS.—According to the Rev. Elizabeth W. Greenwood, there are 2,432 physicians and surgeons, 105 ministers and 75 lawyers in this country who are women.

DR. HOMER O. HITCHCOCK, of Kalamazoo, died on Dec. 8. He was born in 1827. He was graduated from the College of Physicians and Surgeons of New York in 1855.

GIFT TO THE WORCESTER CITY HOSPITAL.—The Armenians of Worcester, Mass., recently made up a purse of \$200 and presented it to the City Hospital.

DR. HENRY LEFFMANN has been elected Pathological Chemist of the Jefferson Medical College Hospital.

DR. JOHN NORTH, of Keokuk, Kansas, will remove to Toledo in a few months.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from December 8, 1888, to December 14, 1888.

By direction of the Secretary of War, Col. Jedediah H. Baxter, Chief Medical Purveyor, will proceed to St. Louis, Mo., and Hot Springs, Ark., on public business connected with the Medical Department, on completion thereof to return to his proper station. Par. 13, S. O. 289, A. G. O., Washington, December 12, 1888.

Major Francis L. Town, Surgeon, is relieved from duty at the post of San Antonio, Tex., and will report in person to the commanding officer Presidio of San Francisco, Cal., for duty at that station, relieving Major Henry R. Tilton, Surgeon, and by letter to the commanding General Dept. of Cal. Par. 19, S. O. 286, A. G. O., Washington, D. C., December 8, 1888.

Major Tilton, upon being relieved by Major Town, will proceed to West Point, N. Y., and report in person to the Superintendent of the U. S. Military Academy for duty at that station, relieving Major Charles F. Heizmann, Surgeon. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Major Heizmann, upon being relieved by Major Tilton, will proceed to San Antonio, Texas, and report in person to the commanding officer of that post for duty, and by letter to the commanding General Dept. of Texas. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Capt. James A. Finley, Asst. Surgeon, is relieved from duty at Ft. Buford, D. T., to take effect upon the expiration of his present sick leave of absence, and will report in person to the commanding officer at Ft. Assiniboine, M. T., for duty at that post. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Capt. Alonzo R. Chapin, Asst. Surgeon U. S. Army, is granted leave of absence for fourteen days, to commence on or about December 24, 1888. Par. 1, S. O. 261, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, December 11, 1888.

Capt. Richard D. Johnson, Asst. Surgeon, is relieved from duty at Ft. Adams, R. I., and will report in person to the Superintendent of the U. S. Military Academy, West Point, N. Y., for temporary duty at that station. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 15, 1888.

Surgeon Thomas N. Penrose, ordered for examination preliminary to promotion.

Medical Inspector A. S. Oberly, ordered before the Retiring Board.

P. A. Surgeon S. H. Dickson, detached from the "Richmond" and to the "Pensacola."

P. A. Surgeon Richard Ashbridge, detached from the "St. Louis" and to the "Richmond."

Asst. Surgeon Ernest W. Auzal, promoted to P. A. Surgeon.

Asst. Surgeon F. W. F. Wieber, promoted to P. A. Surgeon.

CORRIGENDA.

In the report of the discussion of the paper entitled "The Medical-Legal Aspects of some Injuries of the Spinal Cord," the last line, p. 856, should read, "Spinal concussion can be as limited as concussion of the brain is." In the 14th line from top 2d col. p. 856, for "should" read "from." In the 7th line, "or" should follow the word "ataxia," and the sentence close with "perverted sensations." In line 22 is printed "commotio cerebri" instead of "commotio spinalis."

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ORIGINAL ARTICLES.

THE DETERMINATION AND TREATMENT OF HYPERMETROPIA.

Read before the Chicago Ophthalmological Society, on February 14, 1888.

BY W. FRANKLIN COLEMAN, M.D., M.R.C.S., ENG.
PROFESSOR OF OPHTHALMOLOGY AND OTOTOLOGY, POST-GRADUATE MEDICAL SCHOOL OF CHICAGO.

Though I have nothing novel or startling to announce, still, for the sake of discussion of a vexed question, I introduce this subject. How close and general that classical writer, Donders, considers the relation of asthenopia to hyperopia is evident from the following: "It is a great satisfaction to be able to say that asthenopia need now no longer be an inconvenience to any one. The discovery of the simple fact that asthenopia is dependent on the hypermetropic structure of the eye pointed out the way in which it was to be obviated. Could it be otherwise than that, with the correction of the hypermetropia by means of convex glasses, its resulting asthenopia must also disappear?"

While this grand discovery of hyperopia and its correction by Donders has, perhaps more than aught else, accomplished much for the relief of eye-strain, yet we do not find in the correction of hyperopia such a universal panacea as the above would indicate—for asthenopia may occur with any or no error of refraction, and require quite other treatment than convex glasses. However, hyperopia is so prevalent a source of weak sight that no one will question the importance of its accurate determination as a guide to treatment.

There are three questions I wish particularly to introduce and would like to have especially discussed:

1. Is it necessary to paralyze the accommodation in order to prescribe the most suitable glasses?
2. Can the accommodation be completely paralyzed by homatropine?
3. How much of the hyperopia should be corrected with glasses?

My answer to the first question would be, yes; to the second, I think not; to the third, from .5 to 1 D. less than the total if the glasses are to be worn constantly, and the total if they are to be worn for near vision only.

The first question, judging from my own experience, needs little discussion. He, however skilful, who prescribes glasses for hypermetropia by the aid of the ophthalmoscope and test glasses without paralyzing the accommodation will, in my opinion, make many serious mistakes. My impression is most oculists entertain the same view. On the other hand, such men as Hasket Derby, Strawbridge, etc., are (to my knowledge) in the habit of testing and of prescribing with the accommodation active.

Donders says it is seldom necessary to employ mydriatics for the determination of hypermetropia, but it is justifiable for the more accurate study of the connection between manifest and latent hypermetropia. Juler writes: "From the age of 20 to 30 a mydriatic can often be dispensed with—after the age of 30 mydriatics are seldom necessary."

In answer to our second question it may be said many oculists (among them Drs. Agnew and Webster), have given up the use of homatropine, deeming it insufficient for complete paralysis, and have returned to the use of atropine. On the contrary, members of this Society express themselves as satisfied with the use of homatropine in prescribing glasses. Dr. Gradle told us that, after a series of experiments, he concluded complete paralysis could be produced with homatropine.

To the same conclusion has Dr. C. A. Oliver (Philadelphia) come after extended experiments. He says: "The utmost loss of accommodation occasioned by the single instillation of $\frac{1}{2}$ gr. of homatropine takes place in thirty-two minutes, and if, at the time of the utmost action of $\frac{1}{2}$ gr., the $\frac{1}{4}$ gr. was instilled, complete paralysis was established in fifty-four minutes, and remained stationary more than thirty minutes. This allows of the accurate testing of ametropia."

Juler, in mentioning the above results, does not give the method of Dr. Oliver's experiments, so we are not aware whether, after homatropine, atropine was used as a test of complete paralysis, or upon what grounds Dr. Oliver bases his con-

¹ Since writing the above Dr. Oliver has kindly favored me with a letter stating the conditions of his experimental work with homatropine. Ten young eyes were selected, "one of which was emmetropic, and the remaining nine most carefully and recently corrected by atropia, and thus, as it were, in a quiet emmetropic state. This fact renders the exact experimental and the ordinary clinical results far different. No one has been more fully aware that homatropine cannot be made to supplement in any way the use of atropia in the proper correction of errors of refraction than myself."

clusions. I have found in several instances the glasses prescribed under homatropine as commonly used, viz.: grs. viij aq. $\bar{5}j$ instilled three to four times in an hour before testing, unsatisfactory, and have obtained a greater degree of ametropia, and more satisfactory results, with atropine, so that I have come to distrust the finding with homatropine and, when possible, substitute atropine.

Dr. Hotz uses in testing a 4 per cent. solution of homatropine, with which he expresses himself satisfied. One minim of this solution instilled twice in one half-hour will, according to Dr. Oliver, produce complete paralysis of accommodation in fifty-four minutes. Yet I have frequently used a 4 per cent. solution of homatropine from twice to four times in an hour, and by the subsequent use of atropine determined accommodation had not been completely abolished, for a greater degree of hyperopia appeared under the latter.

To return to our question: Is it necessary to paralyze the accommodation in order to prescribe the most suitable glasses? Formerly my practice was to test and prescribe with the accommodation active, since this is the condition of near vision. With greater experience the result of such a practice has been frequently observed to be unfavorable, and for some time past I have, as a rule, used atropine. Out of many cases which might be cited, two will be sufficient to illustrate the discrepancy between the results of testing with and without accommodation:

1. C. H. H., æt. 11, has had symptoms of asthenopia for one year. With accommodation active, R. V. + 60 C., $90^\circ = \frac{2}{3}$; L. V. + 60 C., $90^\circ = \frac{2}{3}$. Under atropine, R. V. + 16 = $\frac{2}{3}$; L. V. + 16 = $\frac{2}{3}$. Glasses + 20 gave perfect relief.

2. Mrs. Hart, æt. 26; asthenopic. With active accommodation, R. E. + 42, V. = $\frac{2}{3}$; L. E. + 36, V. = $\frac{2}{3}$. Under atropine, R. E. + 30 + 60 C., 105° V. = $\frac{2}{3}$; L. E. + 20 + 60 C., 90° V. = $\frac{2}{3}$. These latter glasses afforded perfect relief after the former had been tried and failed.

To revert next to our second question: "Can the accommodation be completely paralyzed by homatropine?" Tweedy found (*Lancet*, 1880) a solution of homatropine (grs. iv. aq. $\bar{5}j$) produce total paralysis of accommodation. Schell (*Specialist and Intellig.*, Philadelphia, 1883) says a 3 per cent. solution produces paralysis of accommodation in half an hour.

I will cite the following sixteen cases tested by myself, first with homatropine grs. viij to grs. xx in aq. $\bar{5}j$, and subsequently with atropine, grs. iv aq. $\bar{5}j$, in proof that the former does not produce complete paralysis, and does not furnish reliable indications for prescribing.

Case 1.—Miss G., æt. 16. The right eye, under homatropine grs. viij aq. $\bar{5}j$, accepts — 36 C. 180° (1); under grs. xx aq. $\bar{5}j$ + 36 C. 90° — 72 (2); under atropine grs. iv aq. $\bar{5}j$ + 36 C. 90° (3). The 4 per cent. solution of homatropine was ap-

plied twice in half an hour. The atropine was applied five times during two days. By comparison we notice the 4 per cent. solution of homatropine released .5 D. more of the accom. than the 1.7 per cent., and the atropine released .5 D. more than the 4 per cent. of homatropine +. That is, (1) + 72 = (2); (2) + 72 = (3).

Case 2.—Mrs. H., æt. 26. Complains of asthenopia and nictitation for years. Has given up reading during the past year, as any attempt would cause headache. Homatropine grs. viij aq. $\bar{5}j$ four times in one hour. R. E. + 30 = $\frac{2}{3}$; L. E. + 20 = $\frac{2}{3}$. Glasses + 36 afforded relief for a time. Seven months later Mrs. H. reports any use of her eyes causes redness and smarting. After atropine grs. iv aq. $\bar{5}j$ t. d. for three days, R. E. + 30 + 60 C. $105^\circ = \frac{2}{3}$; L. E. + 20 + 60 C. $90^\circ = \frac{2}{3}$. These glasses gave perfect comfort in reading.

Case 3.—J. T., æt. 10 years. Homatropine grs. viij aq. $\bar{5}j$ was applied four times in twenty-four hours, and then four times in one hour, and the refraction tested. The R. E. accepts + 8 C. 105° ; the L. E. + 10 C. 75° . A subsequent testing, under atropine three days, gave for the R. E. + 7 C. 105° , and the L. E. + 7 C. 70° + 60.

Case 4.—M. T., æt. 26. Homatropine (grs. viij) ten times during three hours. R. E. + .75 D. + 1 D. 60° ; L. E. + 1.25 D. + 1 D. 120° . After atropine (grs. iv) six times in twenty-four hours, R. E. + 1 D. + 1 D. 60° ; L. E. + 1.25 D. + 1 D. 120° .

Case 5.—C. N. Homatropine (grs. viij), ten times in one hour. R. E. + .5 D. V. = $\frac{2}{3}$. Thirty-five minutes after atropine (grs. iv), was once applied, R. E. + 1 D. V. = $\frac{2}{3}$.

Case 6.—E. H., æt. 12. The R. E., under homatropine, shows H. = $\frac{1}{2}$; under atropine $\frac{1}{8}$. The L. E. under the former $\frac{3}{8}$, the latter $\frac{1}{4}$. The homatropine was used (grs. viij) four times in an hour, the atropine three times in twenty-four hours.

Case 7.—Dr. X. tested Dr. Y. after using homatropine (grs. viij) three times in half an hour, and prescribed R. E. + .75 D. 55° ; L. E. + 1 D. These glasses were unsatisfactory. Dr. X. again tested with homatropine and prescribed R. E. + .75 D. + .75 D. 55° ; L. E. + .75 D. + .75 D. 100° . These glasses gave more but imperfect relief. I found, after atropine three times a day during three days, R. E. + .75 D. + 6 D. 75° ; V. = $\frac{2}{3}$; L. E. + 1 D. + 1 D. 90° , V. = $\frac{2}{3}$. After using these glasses for months Dr. Y. says he can read for two or three hours without any inconvenience.

In the following cases a 4 per cent. solution of homatropine was used, followed by atropine (grs. iv aq. $\bar{5}j$).

Case 1.—Miss F., æt. 25. Homatropine three times in one hour. R. E. accepts + 72 + 60 C. 90° ; L. E. accepts + 72 + 48 C. 90° . After at-

ropine t. i. d. for three days R. E. accepts + 48 + 60 C. 90°; L. E. accepts + 48 + 36 C. 90°.

Case 2.—Mrs. H., æt. 28. Homatropine four times in two and one half hours. R. or L. V. + 60 = $\frac{2}{3}$ °. Atropine t. i. d. for two days, R. V. + 48 = $\frac{2}{3}$ °; L. V. + 30 = $\frac{2}{3}$ °.

Case 3.—A. B., æt. 12. Homatropine four times in two hours. R. V. + 24 C. 90° = $\frac{2}{3}$ °; L. V. + 24 C. 90° = $\frac{2}{3}$ °. Atropine t. i. d. for four days. R. V. + 24 + 36 C. 90° = $\frac{2}{3}$ °; L. V. + 36 + 30 C. 90° = $\frac{2}{3}$ °.

Case 4.—R. A., æt. 9. Homatropine three times in one hour and 20 minutes. R. V. + 1.25 D. = $\frac{6}{8}$; L. V. + 1.50 D. = $\frac{6}{8}$. Atropine t. i. d. for three days. R. V. + 1.25 D. = $\frac{6}{8}$; L. V. + 2 D. = $\frac{6}{8}$.

Case 5.—J. B., æt. 13. Homatropine applied four times in an hour, and eyes examined twenty minutes later. R. V. + 16 + 36 C. 120° = $\frac{2}{3}$ °. L. V. + 30 = $\frac{2}{3}$ °. Atropine t. i. d. for three days. R. V. + 12 = $\frac{2}{3}$ °. L. V. + 18 = $\frac{2}{3}$ °.

Case 6.—Mrs. H., æt. 25. Homatropine three times in one hour. R. V. + 60 C. 90° = $\frac{2}{3}$ °. L. V. + 72 = $\frac{2}{3}$ °. Atropine t. i. d. for three days. R. V. + 60 + 60 C. 90° = $\frac{2}{3}$ °. L. V. + 36 = $\frac{2}{3}$ °.

Case 7.—M. T., æt. 10 years. Had been examined under a mydriatic seven months previously by an oculist, who prescribed glasses + 15 for constant use. These were fairly satisfactory for five months, but during the past two months the letters would blur and head ache in ten minutes' reading. Under homatropine four times in an hour and a half R. V. + 42 = $\frac{2}{3}$ °. L. V. + 36 = $\frac{2}{3}$ °. Under atropine t. i. d. for three days R. or L. V. + 36 = $\frac{2}{3}$ °. At 20' adduct. = 8°, abd. = 6°; V. d. = equilibrium. With accom. R. or L. V. + 36 = $\frac{2}{3}$ ° +. These glasses gave perfect comfort and were prescribed for constant use.

Case 8.—A. H., æt. 16. Convergent strabismus and choroiditis disseminata. After homatropine four times in one hour R. V. + 9 = $\frac{2}{3}$ °, L. V. + 9 = $\frac{2}{3}$ °. After atropine instilled t. i. d. for three days R. V. + 8 = $\frac{2}{3}$ °, L. V. + 8 = $\frac{2}{3}$ °.

Case 9.—S. E. A., æt. 12 years. With homatropine four times in two hours R. or L. V. + 36 = $\frac{2}{3}$ °. With atropine t. i. d. for three days, R. or L. V. + 24 = $\frac{2}{3}$ °.

An analysis of the first seven cases in which homatropine grs. viij aq. 5j was used followed by atropine grs. iv aq. 5j, demonstrates, in case 4, .25 D. more hyperopia under the latter. Cases 1, 5, 6, .5 D. more hyperopia. Case 2, an astigmatism of .6 D. in each eye was developed. Case 3 shows an added .6 D. ast. in R. eye and 2 D. ast. + .6 D. hyperopia in L. E. Case 7 shows a change of 20° in the axis of the cyl. in R. E., and an increase of H. 25 D. + ast. .25 D. with axis of cylinder changed 10°.

To summarize the last nine cases. There was developed under atropine an increase of hyperopia, as compared with the findings under homatropine,

as follows: In two eyes .15 D.; in two .25 D.; in four .5 D.; in one .6 D.; in three .75 D.; in one 1 D.; in one 1.5 D. In one eye + 1 D. astigmatism disappeared. In one there was .25 D. more astigmatism; in one .33 D. less; in one .5 D. less. In two eyes the refraction remained the same under atropine.

3. How much of the hyperopia should be corrected? As to this question the answer exhibits a befogging diversity of opinion. Donders says: "In very young persons in whom we may expect much latent hypermetropia, and in those who are somewhat more advanced, for example, at 30 years of age, where the range of accommodation has undergone much diminution, glasses which correct only the manifest hypermetropia are scarcely ever sufficient." Again, "If we know Hm. and Hl. we give glasses which neutralize the manifest; and about one-fourth of the latent hypermetropia, in general they will answer the purpose, either immediately or after a few weeks." In their systematic works Carter, Wells, Schweigger and Williams give practically the above formula of Donders for prescribing glasses. Mittendorf, Wolf and Nettleship say, give full correction in children, while Roosa advises less than full correction, especially in young people. DeWecker advises a correction of less than Hm. in children with high hypermetropia. Landolt, in his splendid recent work, directs glasses for hyperopia of a strength inversely to the range of accommodation. Noyes' rule is full correction if the total H. = $\frac{1}{12}$ or more, and correction of the manifest H. only if the total = $\frac{1}{16}$ or less. DeWecker and Nettleship correct only Hm. in adults. Wolfe (Glasgow) and Lang (London) give full correction, as a rule, and G. T. Stevens recommends it. Juler writes, "Deduct half a diopter from the Ht. when the glasses are to be worn constantly, and give full correction when they are to be worn for near vision." This, in my judgment, is the best rule, of any quoted, to follow. Instead of adopting any method based upon the age of the patient, or the degree of the hyperopia, it is much more simple to include all cases in one formula, as does Landolt, who considers the static and dynamic (accommodation) refraction as one whole, and says, "The convex glasses ought to correct the whole of the refractive defect and disengage a certain quota of accommodation, which will help the person to keep up his ocular work the desired length of time." This "quota" Landolt considers from $\frac{1}{4}$ to $\frac{1}{3}$. In other words, he thinks $\frac{2}{3}$ to $\frac{3}{4}$ of the total power of accommodation can be comfortably used for continuous work. Then his rule in practice amounts to this: Allow $\frac{2}{3}$ to $\frac{3}{4}$ of the accommodation to be used towards the correction of the static refraction and make up the deficit by adding a convex glass. To take one of his examples: Suppose a hyperope of 7 D. has accommodation of 9 D.; with what glass will he

most conveniently work at 3 D.? In order to see at 3 D. a hyperope of 7 D. requires 10 D. of refraction. For this he requires a glass of 4 D.; the 6 D. ($\frac{2}{3}$ of 9 D.) of accommodation allowed, making up the deficit (in total 10 D.).

In designating the law of Landolt for prescribing glasses as the "most simple," I did not intend to subscribe to it, and in practice do not. Clinical experience will, I think, furnish abundant evidence that $\frac{2}{3}$ to $\frac{3}{4}$ of the accommodation *cannot* be used without asthenopic symptoms resulting. Otherwise very few hyperopes would suffer from asthenopia—as can be easily illustrated from Landolt's own table of "amplitude of accommodation." His table gives 14 D. to 7 D. of accommodation from the age of 10 years to 30. From the above it follows the eye could use 9.33 D. to 4.66 D. ($\frac{2}{3}$ of 14 D. to 7 D.) of accommodation for continued effort (Landolt). Consequently, for reading at 12 in. (3 D.) there would be 6.33 D. to 1.66 D. (9.33 D.—3 D. to 4.66 D.—3 D.) of accommodation, which could be utilized (without asthenopia) to correct hyperopia.

This, I think, does protest too much, for we cannot believe that between the ages of 10 and 30 a hyperopia of 6.33 D. to 1.66 D. may exist, with the rarest exception, without symptoms of asthenopia.

Again, to compare the emmetrope with the hyperope, say at the age of 20 years: Suppose each has 9 D. of accommodation; the emmetrope reads at $\frac{1}{3}$ meter with 3 D. of accommodation ($\frac{1}{3}$ of his total), while a hypermetrope of 3 D. would be compelled to use at the same distance ($\frac{1}{3}$ meter) 6 D. of accommodation (*i. e.*, $\frac{2}{3}$ of his total). My contention is, the 3 D. (total) of hyperopia should be corrected with a glass of 3 D., to make the eye equal to the emmetrope in refraction. I do not forget Donders' objection to the above, that the patient cannot at once (with full correction) relax the total amount of accommodation, and therefore accommodates (with the glass) for too near a point, and accommodative is changed into muscular asthenopia. But we know that Donders himself recommended, and now the majority of oculists prescribe glasses stronger than the manifest hyperopia, and that the eye soon adapts itself to these glasses which are changed from time to time for stronger. The principle remains the same if full correction is given at once, *i. e.*, gradual relaxation of the latent spasm of accommodation. Since there are many persons who cannot, or will not, consult an oculist a second time, much less a third or fourth, in regard to changing their glasses, I think it is best to give full correction and direct them to use the glasses by graduated exercise, and to hold the book 15 inches distant, assuring them the eyes will in time adapt themselves to the glasses, which will then not require to be changed until the age of presbyopia. If without putting the accommodation

at rest, we prescribe glasses, or if we atropinize the eyes and give only partial correction, it may happen (however admirable our intention) we will benefit the patient not more or less than might the happy-go-lucky testing of the average optician (whose exclusive prerogative, the public think, it is to fit glasses); the jeweler who displays (with other precious stones) pebbles which he can especially recommend as most cooling to the eyes, or the general merchant at the cross-roads, who is compelled to furnish all sorts of hardware.

I will report only two cases as examples of the result of total correction:

S. E. A., æt. 12. Can read only five to ten minutes without headache and other symptoms of asthenopia. Under atropine (grs. iv ad. $\bar{5}$ j) t.i.d. for three days. R. or L. V. +24 = $\frac{2}{3}$. Sps. +24 prescribed, with which he reads by the hour comfortably.

Daisy B., æt. 10. During the past six months only very large type could be read, and even it tired the eyes very much in a very short time. After atropine t.i.d. for three days the R. E. accepted +4 D. +.75 D. 90°; the L. E. +4 D. +3 D. 90°. With these glasses there has been (during a three months' trial) no inconvenience in reading.

The favorable results of treating the majority of asthenopes by the correction of their hyperopia with convex glasses are too familiar to make the citation of their cases of any special interest.

A few cases will be reported in which muscular insufficiency being present, the symptoms did not yield simply to the correction of the refraction.

The subject of muscular anomalies and their treatment is too large to fully consider in this paper. I am convinced we too often neglect to test the ocular muscles in examining asthenopic patients, and thereby fail in many cases to relieve.

Miss McG., æt. 37. Seamstress. Complaints of pain in the eyes during the past year whenever she read or sewed, and she has suffered a good deal from headache. With accommodation. R.V. = $\frac{2}{3}$ = 5 J. 12" + 36 C. 90° = $\frac{2}{3}$; +24 + 36 C. 90° = 1 J. 10". L. V. = $\frac{2}{3}$ = 3 J. 12" + 42 = $\frac{2}{3}$; +18 = 1 J. 10". At 21' adduct. = 10°; abd. = 6° at 12" add. = 14°; abd. = 10°; V. d. = 4°. Converge. Under homatropine, grs. viij ad. $\bar{5}$ j. R. V. +36 + 36 C. 90° = $\frac{2}{3}$; L. V. +24 = $\frac{2}{3}$. Glasses were prescribed. R. E. +24 + 36 C. 90° \bigcirc prism 2° base in. L. E. +18 \bigcirc prism 2° base in. Ten months later Miss McG. reports she is much relieved, being able to sew all day, with glasses, but cannot read in addition. When in good condition the eyes feel pretty well, but at times they pain and smart.

I regret not having used atropine, instead of homatropine, since Miss McG. will not now take time for examination with atropine, and is imperfectly relieved.

Pain in the eyes and head relieved by sphero-

abducting prisms for near vision, and sphero-abducting prisms for distant vision.

Mrs. E., æt. 32. Is neurotic, and of a neurotic family. Has suffered from asthenopia for 12 years. During the past year she has used her eyes only to write and read letters and read familiar music. Has a dull pain in the eyes and head much of the time. For two years (excepting two weeks) has used homatropine (grs. ij ad. 5j) every evening. Without it the eyes ached constantly. With it, and the avoidance of fatigue, the eyes were pretty comfortable. Six years ago an oculist prescribed—under atropin—a sphero. cyl. glass for each eye. It is doubtful whether they gave relief at first. At the end of a year the eyes were worse. Five years since another skillful oculist examined the eyes—with active accommodation—and gave +60 for each eye. He directed exercise of ocular muscles, by converging for a near point. This gave pain and did not benefit. With the +60 glasses she can read only ten minutes. The strength of the recti had not been tested. With active accommodation I find the R. E. + 72. V. = $\frac{2}{3}$; L. E. V. = $\frac{2}{3}$. Refuses a glass. At 20' add. = 24°; abd. = 2°; V. d. = equilibrium 12" With atropine vertical diplopia with prism shows R. E. + 36. V. = $\frac{2}{3}$; L. E. + 6° divergence. 36 C. 90°. V. = $\frac{2}{3}$ at 20' add. = 24°; abd. = 3°; V. d. = equilibrium with sps. Glasses were prescribed, to be worn for distance. R. E. + 36 \bigcirc prism 2° base out; L. E. 36 C. 90 = \bigcirc prism 2° base out; for reading R. E. + 36 \bigcirc prism 2° base in; L. E. + 36 C. 90° \bigcirc prism 2° base in. Galvanism had been applied to the eyes, but it caused pain and was given up. It had been tried previously, at home, and always caused pain in the head and eyes. Mrs. E. returned in six weeks and stated she had given up the use of homatropin, had worn the glasses for distance and reading, and when she felt well could read three to four hours a day. She had had no pain in the eyes and little in the head. At 20' add. = 26°; abd. = 5°. V. d. = equilibrium. Advised to use gymnastic prisms five minutes once a day. Three months later Dr. E. wrote: "Mrs. E. saw Dr. Moore before she left New York. He was convinced convergence was so excessive as to give occasional strabismus, although at 20' the Graefe test gave equilibrium. He advised tenotomy—full. The result has been very great improvement, and from her increased ability to use her eyes and her absence of headache, I think and hope it will be a cure.

The above result of tenotomy is very interesting and satisfactory. It demonstrates (as Dr. Noyes has pointed out) that the muscular findings by distant testing, are a much more reliable guide to treatment than the findings for the near point. I cannot say whether the gymnastic prisms were used by which means the real relative strength of the external and int. recti would have

been more evident when Dr. Moore tested. Upon referring to my first testing it is noticed that at 20 feet there is facultative divergence of only 2° with dynamic equilibrium, while with the Graefe dot and line test at 12 in. there is dynamic divergence of 6°. Subsequently (3d testing) at 20 feet prism of abduction equal to 5° while ad. = 26°.

Miss M. S., æt. 15 years, an undeveloped delicate girl, who for years had suffered constantly from headache and pain in the eyes. The family physician had been able to give but little relief, so sent the patient to me to have her eyes examined. Miss S. says any attempt to read produces pain in the eyes and brows, flowing of tears and blurring of the type in a few minutes. R. E. V. = $\frac{2}{3}$ = 1 J. 12" + 48 = $\frac{2}{3}$ L. E. V. = $\frac{2}{3}$ = 1 J. 12" refuses glass. At 6 feet Ad. = 13°: Ab. = 10°: Vd. = Div. 8°. Under atropine R. E. + 36 C. 90° V. = $\frac{2}{3}$: L. E. + 30 C. 90° V. = $\frac{2}{3}$. Upon fixation within 12 in. with either eye the fellow eye diverges. Advised arsenic and fat food. After application of galvanism daily for two weeks, the eyes were less sensitive to pressure but the pain was not relieved.

A second testing under atropine gives R. V. + 48 = $\frac{2}{3}$: L. V. + 48 = $\frac{2}{3}$. With accom. R. or L. eye accepts + 48. Directed to wear constantly for distance + 48 \bigcirc prism 2° base out (each eye). Read with these glasses and with + 36 on alternate days. Commencing with five minutes three times a day, and increase the time one minute daily. Three weeks later, Miss S. can read twenty-seven minutes comfortably with either pair of glasses. Directed now to try the sphero-prisms with *base in* alternately with + 36 and continue to increase the reading time as before.

After six weeks, Miss S. reports she has reached 54 minutes with comfort, and reads equally well with either pair of specs. The headache is unrelieved. At 20' ad. = 24°: Ab. = 6°: V. D. = *Conv.*

Spheroadducting prisms (+ 48 \bigcirc 2°) were given for distance and sphero, abducting (+ 48 \bigcirc 2°) for reading, and prisms 6°, 8°, 10° and 12° to be used once daily for five minutes, with the light (as object) at 20 feet. Miss S. returned in six months. Says she can read as long as she wishes now without any inconvenience, and the headache is very much less. Her eyes now accept as the best reading glasses, R. or L. + 72 + 60 C. 90° \bigcirc prism 2°, base in. The adducting prisms for distance cause headache and are discontinued.

Mrs. S. reports seven months later that her daughter is from home at school, has no trouble in using her eyes for her studies, and rarely suffers from headache.

The good result in this case I attribute to graduated exercise in reading and to the use of gymnastic prisms. Since spherical glasses, sphero-adducting or sphero-abducting prisms could be

worn equally well it is not likely the prisms afforded much relief in reading.

Spasm of accommodation and asthenopia in a patient with total hyperopia = $\frac{1}{16}$, relieved only after the use of atropine for nine and a-half months.

M. B., æt. 9 years, since commencing to attend school at the age of six, has held her book very near, and now reads habitually at four inches. The reading of two or three sentences produces pain in the eyes, brows and jaws.

With accommodation R. V. = $\frac{3}{8}$ = 1 J. 4 to 12 in. + 48 = $\frac{2}{3}$ L. V. = $\frac{2}{3}$ 1 J. 4 to 7 in. + 60 C. 90° = $\frac{3}{8}$. After atropine t.i.d. for three days, R. E. + 20, V. = $\frac{2}{8}$, L. E. + 24, V. = $\frac{2}{8}$. R. specs + 36 for reading. Two weeks later can read two pages before eyes tire. R. + 24, specs to be worn constantly. Four and a-half months subsequently Maud reports there has been no trouble in reading at 15 inches, and she liked the glasses for distance as she could see farther and had no headache, but for two weeks past the eyes have again troubled her in reading. There is again spasm of accommodation. R. Repeat atropine t.i.d. Two weeks later total H = $\frac{1}{16}$ R. or L., R. atropine once daily. Four and a-half months, later the atropine had been discontinued for weeks and reading could be done comfortably without glasses. Advised to continue the use of glasses to prevent relapse.

I think the moderate continued exercise of the internal recti by the wearing of abducting prisms for distance, is much more effectual than electricity, or than the spasmodic gymnastic use of prisms, in relieving muscular insufficiency. Galvanism I have found lessens very much the pain and tenderness of the eyes which accompany asthenopia, but electricity has appeared to me to accomplish little in strengthening ocular muscles.

Gradually increasing exercise of the eyes seems to be as much indicated in asthenopic hyperopes who are not relieved at once with glasses as in emmetropes with weak sight, for whom Dr. Dyer used it with such signal success.

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HEPATIC INCOMPETENCE IN CHILDREN.

Read in the Section on Diseases of Children, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

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A type of patient, very familiar to the physician interested in pædiatrics, is the well-known, sal-low, neurotic anorexic child, the torment of herself, parents and the physician. She—for it is more frequently a she than a he—is as a rule dyspeptic, constipated, generally disordered in secretion and yet without demonstrable lesions.

What ails these children? If there happens to be a feverish exacerbation during the day, malaria is usually charged with their infirmities, but quinine aggravates their troubles instead of removing them. Gastric catarrh and the so-called bilious attacks are met with in a certain proportion of these cases but by no means in all; nor does the treatment of the gastric catarrh alone cure these children. General tonics, especially the feruginous, make matters worse, and the most careful physical examination fails to reveal anything except in a very few cases where moderate tenderness and enlargement of the liver may be detected. Beyond dispute these children are not well, but there is no word that will explain their condition, unless we fall back on that much abused term "biliousness." But bilious they are not, in the sense that there is an excess of bile, or its reabsorption to any considerable degree—although there may be sallowness, furred tongue, and stools inclined to a clay color.

Other of their symptoms may be found in Murchison's description of lithæmia, but this is partial and only embraces those cases in which there is a copious deposit of uric acid or the urates in the urine, due to imperfect formation of urea.

Hepatic incompetence is a better term, for it includes not only imperfect nitrogenous transformation, but all other deficiency in the work of the liver. The name has been adopted in regard to the work of the kidneys, and something of the kind is needed to scientifically group together not a few of the morbid conditions of early childhood very unlike in their clinical manifestations, and yet in the, writer's opinion, all due to imperfect work on the part of the liver.

Etiology.—In these days of bacteriological laboratories and microbes many and various, it takes some moral courage to insist that there is such an old fashioned organ as the liver and that it may become functionally deranged without the provocation of any bacillus. Such I believe is frequently the case in children with whom organic diseases of the liver are rare, but functional exceedingly common. These functional disturbances may be conveniently grouped into three divisions: Icteric (bilious), lithic, and toxic, according to the prominence of certain groups of symptoms, corresponding to the interference with the three more important functions of the liver. Very likely there are other and fully as important ones not yet recognized, for the general knowledge of the profession in regard to that much abused organ is hardly better than that of Hippocrates, who steadfastly believed that the liver was the home of the emotions, and that a man became melancholy, or choleric, according as it formed an excess of various kinds of bile. The chemistry of the bile and its action upon digestion have been carefully studied upon the lower animals, but there is yet a woeful lack of knowledge as to the

origin of the various bile salts and pigments, and much dispute as to the part they play in the human economy. The bile pigments, in all probability, are derived from the hæmoglobin of the blood and possess decidedly antiseptic properties—as proven by the intestinal fermentation which occurs when they fail to pass into the alimentary canal. Such intestinal disturbance, clayey stools, disordered peristalsis and greater or less degree of icterics constitute the group of symptoms to which belongs the term *icteric*, or bilious in common parlance, arising from this form of hepatic incompetence.

The second, or lithic, group of symptoms, are those so well described by other writers under the head of lithæmia, that they need no repetition here except to mention that here belong all symptoms referable to the liver's failure to transform albumenoids into (soluble) urea. They are the clinking of the body's furnace with uric acid and urates with the accompanying gastro-intestinal, renal and cystic disturbances.

Lastly and by no means least in importance are the toxic or toxæmic symptoms due to the failure of the liver to destroy the toxic substances normally formed within the body. This function of the liver—although it might have been inferred from previous experience in toxicology—seems to have escaped the attention of all experimenters previous to Schiff and Lauterbach, of Geneva (1877). They clearly demonstrated that the liver possesses anti-toxic actions, and if the blood is prevented from passing through the liver it acquires toxic properties not unlike those possessed by conia and allied vegetable alkaloids. Later investigators, notably Gauthier, have shown that these poisonous alkaloids are produced by the retrograde metamorphosis of the tissues of the body during life. To distinguish them from the cadaveric alkaloids (ptomaines) they have been named leucomaines, and this sort of hepatic incompetence should be known as leucomaine poisoning, or intoxication; for these leucomaines are toxic, producing death when hypodermically injected into the lower animals. The symptoms produced thereby, so closely resemble the ordinary manifestations of malaria that we are constrained to believe that much of what passes under the name of "dumb ague" is not malarial at all in its origin but is dependent upon the accumulation within the system of these products of decomposition. It is, in short, a variety of septic poisoning, arising from hepatic incompetence, and any form of treatment which fails to take these into account will in so far be found unsatisfactory and disappointing.

Differentiation.—The differential diagnosis of these cases is not difficult if we can but succeed in freeing our minds from the wide-spread belief that hepatic incompetence cannot exist without clayey, or light colored stools. As has already

been said, they may, or may not be present, for certain forms of hepatic incompetence may exist with normally colored fæces and, *per contra*, the liver may efficiently perform its work even with a clay colored stool, due to other causes than hepatic incompetence. Neither does hepatic incompetence require that the liver should be congested and tender, though beyond disputed chronic congestion of the liver eventually leads to incompetence by fibroid contraction and degeneration of its atrophied cells. Nor, again, is it always true that an apparently enlarged liver will produce incompetence, for as Eustace Smith has shown: "the liver is apt to vary in size from natural causes in young children; some having exceptionally short chests which cause the liver, without enlargement, to be displaced a finger's breadth or so below the ribs." Bearing, however, these sources of error in mind, the diagnosis of hepatic incompetency ought to be neither difficult nor uncertain, whether it be attended with the distressing vomiting and purging of a bilious attack or the chronic headache and feverish exacerbations of slow leucomaine poisoning.

Prognosis depends upon the amount of the hepatic incompetence. If complete, as in acute yellow atrophy, or phosphorus poisoning, the result is inevitably fatal. As it is usually met with, the prognosis is excellent both as regards the life of the patient and restoration to health.

Treatment should be both medicinal and dietetic, largely the latter. Many of these cases originate in errors of diet, and cannot be cured except by a correction of the same. Excess of albuminous and stimulating foods and such, is almost universal with the American child, or leads to engorgement of the hepatic veins and of the liver cells in their immediate vicinity, with subsequent atrophy of same according to Eustace Smith. Such cases cannot be cured except by a careful regulation of diet before hepatic incompetence becomes chronic. Starchy foods, fruits and broths are those which require least assistance from the liver in their digestion, are those which should constitute the bulk of the diet of such children, for whom a diet list should be prepared and rigidly enforced. Where intestinal indigestion appears as a complication, peptonized foods ought to be of value, though as a matter of fact, pepsin and salicylic acid (2 + 1) has in the hands of writers been of more real value, than any form of peptonized food yet tested by him. The salicylic acid conjoined with compound spirits of lavender (B. P.), is also valuable in those cases, attended with the deposit of lithates in the urine as a well-marked symptom, both of the drugs having, in some way, a decided effect upon the excretion of uric acid in a more soluble form.

Old-fashioned biliousness and gastric catarrh

are satisfactorily treated with alkalies and laxatives, preference in these cases being given to calomel, for we substitute in these cases castor oil, magnesia, etc., we only aggravate after temporary relief. As a hepatic stimulant, that is one which increases the flow of bile, without regard to its expulsion, calomel is, however, far inferior to the bichloride, podophyllin, or even benzoate of ammonia. According to Rutherford's experiments one of these should be employed when hepatic incompetence is becoming chronic, and for the relief of migraine, in similar cases the writer has found no one remedy equal in value to antipyrin. The same is also very valuable in those cases attended with high febrile excitement, often the highest met with in children, except pneumonia and scarlet fever. What the exact chemical action of the antipyrin is, I am unable to say. Perhaps we may learn from Dr. Parkhurst's paper, but I am convinced that in some way it assists in the excretion of these toxic leucomaines, to whose private study I invite your personal attention, being convinced that such investigation will yield in the near future valuable scientific and practical results.

DR. CHRISTOPHER thanked the reader for bringing the subject before the Section, and elucidating the pathology of a very frequent and obscure class of cases. He spoke at some length upon a condition to which he gives the name hyper-digestion; a formation of ptomaines and alkaloids of putrefaction in the intestinal tract. If the liver is incompetent to deal with the excess of ptomaines, some of these are carried into the circulation, and produce their peculiar effects through the medium of the central nervous system, like all other alkaloids. Since ptomaines can only be formed from nitrogenous foods, it follows, that in the treatment of these cases, such foods should be withheld.

He was accustomed to use calomel as a preliminary cathartic, and soda phosphate afterwards in the mornings as a hepatic stimulant. Salol, salicylic acid and naphthaline, he employs as intestinal antiseptics. His treatment has proved very satisfactory.

DR. GEO. WHEELER JONES thought the term "hepatic incompetence" a good one. It was more troublesome than other forms of indigestion in children. He used oil of wintergreen with sugar or syrup. It would relieve the acid diarrhoea. It is not a chemical compound, and he preferred its use to salicylate of soda. He also said that bichloride of mercury in minute doses was more persistent, and acted more upon the deeper structures than calomel. Another remedial agent was common salt.

CONTROL OF FEMALE COSTUME.—A physician of Missouri announces that he will not take a female patient unless he can order the costume as well as the medicine.

A RECTAL PLUG. FOR SENN'S METHOD OF INSUFFLATION OF HYDROGEN GAS.

BY A. H. MEISENBACH, M.D.,
OF ST. LOUIS, MO.

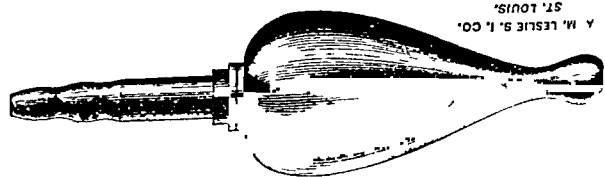
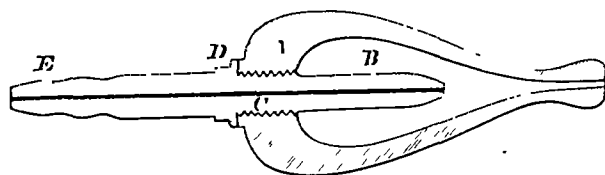
In repeating Dr. Senn's experiments, of insufflation per rectum of hydrogen gas, I found considerable difficulty at times, to prevent the gas from escaping out of the rectum, using the ordinary syringe tip. I found this to be the case in experimenting on dogs, and also on the human cadaver.

Dr. Senn recommends in his paper on "Insufflation of Hydrogen Gas per Rectum," etc., that "an assistant hold the margin of the rectum around the syringe tip."

In order to obviate the inconveniences of an ordinary syringe tip, and do away with the need of an assistant in controlling the margin of the rectum, I devised the herein described rectal plug.

This plug has given great satisfaction, having used it in applying Senn's test in four cases of gunshot wounds of the abdomen which were brought to the City Hospital, and in a case of obstruction of the bowel due to the rupture of a Fallopian pregnancy, where obstruction was produced by an immense coagulum—later case occurring in private practice of Dr. Hornsby, and in which I applied "Senn's Test," demonstrating the value of this measure in diagnosing intestinal obstruction.

In the above applications of Senn's test the plug completely plugged the rectum and effectually prevented the regurgitation of the gas, and allowed the gas bag and plug to be controlled by one person. The plug is made of hard rubber. The annexed cut shows a half size perspective



and sectional view of plug. A represents cone-like plug, with tip similar to ordinary syringe tip. B is a hollow chamber in plug into which extends Tip E, on which is a thread which screws into plug as shown at C. At D on Tip E is a square shoulder and round collar. The square shoulder is for the purpose of allowing a wrench to be used to tighten the tip into plug. Between collar on plug and collar on tip at D a washer is used, so

as to insure perfect air-tightness. The end of Tip E which projects outside of plug is corrugated, so as to easily and tightly fit into rubber tubing from gas bag.

The object of having plug hollow and the tip E project into chamber as shown, is to prevent clogging of the direct communication with the gas bag, when inserting end of plug into rectum, by fæces or mucus which may be in the rectum. Should clogging of tip of plug occur it will not interfere with gas escaping from Tip E into chamber, and can be readily removed or blown out by pressure from gas bag.

I have found that pouring a little sweet oil into chamber, through opening in plug into chamber, in a measure prevents the liability to clogging, as the oil lubricates the sides of opening and facilitates its being readily blown out by pressure from the gas bag.

MEDICAL PROGRESS.

ERYTHROPHLÆIN IN CARDIAC AFFECTIONS.—

DR. HERRMANN, in a recent number of the *Wiener Klinische Wochenschrift*, gives an account of experiments which he had performed in the clinic of Professor Drasche in the Vienna General Hospital, on the effect of erythrophlœin on the diseased heart. It was used in cases of compensated and non-compensated failures of the heart, as well as in cases of fatty heart with slight disturbances of circulation. The drug was used in a solution of 0.002 grams of erythrophlœin in 10.0 grams of laurocerasus water, ten drops of this solution being given every hour. In general, the drug was well tolerated, and only in a case of insufficiency of the aorta depending on acute articular rheumatism did the sensation of disgust and great irritation supervene. Retardation of the pulse after the administration of erythrophlœin came on in several cases, and this was particularly true of the case of insufficiency of the aorta after 150 drops of the solution had been given for eight days. The number of the pulse-beats was reduced from 100 to 84 a minute, and in another case of insufficiency and stenosis of the mitral valve, the pulsations decreased from 100 to 68 a minute after the administration of 50 drops of the solution, and during an interval of time from mid-day till 5 P.M. This, however, was not constant, as in the last mentioned case the number of the pulsations reached 108 a minute three hours later, although the administration of the solution was continued. In another case of insufficiency of the mitral valve with severe palpitations, the drug was administered for twelve days, and it was not until some days later that the frequency of the pulsations sank from 120 to 96 in a minute, and at the conclusion of the experiment it decreased

to about 84 beats. As to the effect of the erythrophlœin on the renal function no particular influence could be observed in some cases, whereas in another series of cases the effect was quite striking. In a patient affected with incompetence of the mitral valve the daily quantity of urine, during an interval of twelve days, increased from 800 to about 1,500 cubic centimètres. In another case of slight fatty heart, where, before the use of erythrophlœin, the number of the pulsations was from 68 to 60 a minute, and the quantity of urine reached 700 cubic centimètres, the latter increased to 2,150 cubic centimètres, while the pulse remained unchanged. The disturbances of respiration had also diminished. Erythrophlœin had also a marked effect on the pupil. In a patient with incompetence of the mitral valve, persistent dilatation of the right pupil ensued on the sixth day after administration. In another case with insufficiency of the aortic valves, distinct dilatation of both pupils came on on the fifth day; this disappeared some days later when the administration of the drug was discontinued. Kaposi had also observed dilatation of both pupils in a case of poisoning from the subcutaneous injection of two centigrams of erythrophlœin (*Journal*, March 24th, 1888). For the sake of comparison, experiments were made with strophanthus. In cases in which erythrophlœin exerted no particular influence on the frequency of the pulsations, the arhythmia, and the congestive symptoms, from 60 to 70 drops of the tincture of strophanthus with equal parts of laurel water were administered in the day. The difference was very striking, and the slight effect of the erythrophlœin could not be compared with that of strophanthus. In one case, for instance, the frequency of the pulsations after the use of strophanthus soon fell from 112 to 72 a minute, and remained nearly at this rate. The arhythmia had almost entirely disappeared, and the excretion of urine was augmented to a much higher degree than after the use of erythrophlœin. Symptoms of poisoning with erythrophlœin were observed on only two occasions. The result of the experiments with erythrophlœin may be summarized as follows: The drug had a marked retarding influence on the pulse, but the effect was not lasting. This was also true of its diuretic influence. The drug was well borne, and might be tried in cases in which digitalis, strophanthus, and similar medicaments were either not well tolerated or were contraindicated. Erythrophlœin did not appear to have any cumulative effect.—*British Medical Journal*, Sept. 1, 1888.

TREATMENT OF TYPHOID FEVER IN CHILDHOOD.—DR. A. JACOBI says: Can typhoid fever be *aborted*? or in other words, can incubation be interrupted? An affirmative answer to this question has often been given, but it is difficult to prove the correctness of the diagnosis in an

alleged case of typhoid fever lasting a few days only. Still, there can be no objection to believing that the proliferation of the poison floating in the blood may be interrupted by antifermentative treatment, and it is certainly either justifiable or advisable to try the effect of otherwise not injurious antifermentatives, such, perhaps, as creolin or bichloride of mercury. As regards the early administration of a large dose of calomel, its effect is notoriously good, no matter whether it acts as a disinfectant directly on the poison, or whether it simply relieves the intestinal tract of the poison introduced, and in progress of proliferation. A child of 3 years may take a dose of 3 or 4 grains; a child of 8 years one of 7 or 8 grains. While the purgative effect of the calomel can be obtained by simply introducing the powder into the mouth, there to be absorbed, it is better in this case to let it be swallowed. It can be safely given during all of the first week of the disease. When, as frequently, there is constipation during the course of the disease, calomel is no less beneficial, but then it must be given in smaller doses, which may be repeated. Small doses of a quarter of a grain to a half grain repeated several times a day, will even have a good effect after diarrhœa has been present and been relieved.

With regard to the *general treatment* of the typhoid fever of children, we are equally liable to injure either by overactivity or by neglect. The so-called *expectant* treatment has its great dangers in the hands of those who make it their invariable rule; it is safe in the hands of those only who have learned to treat the sick rather than the sickness. The air in the sick-room must be cool, the windows open. Drafts, it is true, must be avoided, but screens around the bed will permit the opening of both windows and doors. The bed-sheets must be smooth; four or eight safety-pins will fasten them to the corners and sides of the mattress. At an early period the whole surface ought to be washed with either water alone or with alcohol and water. The hair, when long, ought to be cut. The children must be allowed plenty of water. Those who are liable to have dry lips and tongue must be made to drink a small quantity of either water or dilute muriatic acid in water, ten minims to the tumblerful, in small quantities or ever ten or twenty minutes. Fissures around the lips or in the tongue ought to be washed with a saturated solution of boracic acid, or when bleeding, should be painted once a day with a mild solution of nitrate of silver (not more than 1 per cent.) and afterwards painted with an ointment consisting of boracic acid and lanolin.—*Archives of Pediatrics*, December, 1888.

CREOLIN AS AN ANTISEPTIC.—EISENBERG has found that a 2 per 1,000 mixture of creolin

killed the cholera bacillus and the streptococcus of pus and of erysipelas within two minutes; the bacillus of anthrax was killed in five minutes, while the typhoid bacillus and the staphylococcus of pus were still alive after one hour. This last organism, as well as tetragenese, was killed in ten to fifteen minutes by a 2 per cent. mixture. Compared with carbolic acid, it was found that a 3 per cent. mixture of creolin killed the spores of the anthrax bacillus in two days, a 6 per cent. mixture within twenty-four hours, while a carbolic acid mixture up to 8 per cent. had no effect on the spores within seven days. A similar comparative result was obtained with the hay bacillus, and the superiority of creolin over carbolic acid was further shown by its greater power in preventing the growth of organism in cultures. Creolin is not poisonous, as it may be given in large doses to dogs without deleterious effect. Eisenberg recommends its use in surgery in place of corrosive sublimate, carbolic acid, and iodoform.—*British Medical Journal*, Nov. 10, 1888.

CONSTIPATION IN INFANCY.—In cases that do not recover under proper dietary management, DR. EUSTACE SMITH recommends:

R. Tinct. nucis vom. ℥ss.
Tinct. belladonnæ ℥x.
Infusi sennæ ℥xxx.
Infusi calumbæ ad ʒj.

This may be given thrice a day at first. After a time, two doses will be enough; and before long, one dose at bedtime. An equally good or better prescription is:

R. Tinct. nucis vom. ℥ss.
Ext. cascariæ sagradæ liq. ℥xx.
Tinct. belladonnæ ℥x.
Inf. calumbæ ad ʒj.

The keynote is the combination of nux vomica with belladonna and some gentle laxative. Dr. Smith also recommends, where the motions are very dry, a saline aperient:

R. Quiniæ sulph. gr. ¼.
Acid. sulph. aromat. ℥j.
Tinct. nucis vom. ss.
Aque ad ʒj.

For a child of 6 months.—*Medical Record*, November 24, 1888.

INFLUENCE OF ANTIPYRETICS, PARTICULARLY OF ANTIPYRIN, ON THE AMOUNT OF GLYCOGEN IN THE LIVER.—MM. LÉPINE AND PORTERET have found that the administration of antipyretics (and they used antipyrin principally) decidedly increases the amount of the hepatic glycogen and diminishes that of the hepatic sugar. The antipyretics are obstacles to the transformation of glycogen into sugar, and the fact seems to be in perfect harmony with the recent work of Chauveau on the consumption of glycogen and the production of heat.

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SATURDAY, DECEMBER 29, 1888.

IMPORTANT NOTICE.

Hereinafter all letters, papers, notices and exchanges, designed for THE JOURNAL, should be addressed to "THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 68 Wabash Avenue, Chicago, Illinois." And persons having inquiries to make, or business to transact, will receive prompt attention at the same place until further notice.

CLOSE OF VOLUME XI.

The present number closes the eleventh volume of this journal, and completes the first five and a half years of its publication. As its readers already know, it also terminates the editorial services and management of the present editor.

Though already advanced in life and overburdened with professional work, he accepted the additional heavy responsibility, in 1883, of attempting to establish THE JOURNAL of the Association on a permanent financial basis, and at the same time make it a potent influence for counteracting the disintegrating tendencies of an excessive specialism and an open opposition to the National Code of Medical Ethics; and thereby preserve intact and further develop the grand National organization of the profession of this country that had been so well founded by the National Convention of 1846-7. Only two brief years had passed when the persistent and unnecessary controversy concerning the organization of the Ninth Interna-

tional Medical Congress was developed, and forced upon him an additional amount of labor difficult to bear. But the remarkable epidemic of professional controversies that has characterized the last decade has subsided, and should be left for the future historian.

In the meantime, THE JOURNAL, that had been commenced in July, 1883, when there were only about 1,000 members who had paid their dues annually, as shown by the Treasurer's report at the meeting in Cleveland that year, has been issued every week from that time to the present, when about 4,000 members are paying dues annually, to which may be added a considerable list of paying subscribers who are not members of the Association. The income, that was \$5,008, as shown by the Treasurer's report in 1883, has increased, as shown by the same officer's report in 1888, to \$25,649, and the Association has become owner of its own printing-office and materials, valued at \$2,373.90, without one dollar of indebtedness in any quarter. The pages of reading-matter in THE JOURNAL have been increased until they number eight more than those of any other weekly medical journal in this country; and in quality of paper, type and illustrations they are excelled by those of no other. Equally gratifying is the fact that the Association has not only quadrupled its paying membership during the last half decade, but it has extended the scope and increased the efficiency of its working machinery as represented by its Sections, and its general meetings have been characterized by greater harmony and a more active spirit of scientific investigation; while the several State and local medical societies, upon which the whole fabric of permanent National organization rests, have been correspondingly increasing in their efficiency and influence for good.

Having thus more than realized all the ardent hopes of success that inspired him in commencing his editorial task in 1883, it is with the greatest pleasure that he now surrenders the honorable and responsible position to him who has been selected by the Board of Trustees to fill the same. DR. JOHN B. HAMILTON, for ten years the efficient Supervising Surgeon-General of the U. S. Marine Hospital Service, and late Secretary-General of the Ninth International Medical Congress, needs no introduction to the readers of THE JOURNAL, and no eulogy by me. In the prime and vigor of

his manhood, with high literary and professional attainments, and well trained executive ability, I welcome him to a field of labor that will afford full scope for every noble attribute of which he is possessed. May he live to honor the position many years, and may THE JOURNAL, the American Medical Association, and all the State and Municipal Medical Societies in affiliation with it, continue to hold the whole medical profession of these United States in one grand harmonious organization, ever increasing in numbers, in scientific attainments, in skill for the relief of human suffering, and in reverence for that beneficent Deity who holds the destiny of individuals and nations alike in his own hands, and yet does not allow the poorest of his creatures to suffer without his notice. Finally, the retiring editor cordially wishes that all the readers of THE JOURNAL and its incoming editor may enjoy a truly *Happy New Year* for 1889, and repeat the same with each annual return for all the years to come.

PROFESSIONAL ABORTIONISTS.

The preface to the first edition of Sydenham's "Method of Curing Fevers," which appeared in 1666, opened as follows: "Whoever takes up medicine should seriously consider the following points: firstly, that he must one day render to the Supreme Judge an account of the lives of those sick men who have been intrusted to his care. Secondly, that such skill and science as, by the blessing of God, he has attained, are to be specially directed towards the honor of his Maker and the welfare of his fellow-creatures, since it is a base thing for the great gifts of heaven to become the servants of avarice or ambition. Thirdly, he must remember it is no mean ignoble animal that he deals with."

Within the past two weeks the public and the medical profession of Chicago have learned, through exposures in the *Chicago Times*, that there are numbers of professional midwives and licensed physicians in this city, who declare that for a money consideration they will commit the loathsome crime of abortion, or, if some will not, they can recommend others that will. The *Times* has printed the names of midwives and physicians who declare they are ready to do murder, and most foul murder, for money, or else recommend some one that will commit a violation most wicked

of the laws of God, Nature, and man. As between the assassin, or the thief, and the man that recommends the assassin or thief there is but little difference. Between the licensed midwife-abortionist and the licensed physician-abortionist, what is the difference? It is one of degree, and the deeper degree of infamy attaches to the latter. He is supposed to be more intelligent, to be actuated by higher and more noble principles, and to have for the chief end and aim of his life-work the preservation of human life.

Nothing we can say in this age can paint the crime of abortion in all its loathsomeness, nor its perpetrators, and the inciters to or abettors of its perpetration in all their moral blackness and professional degradation. "The licensed Herods" that have been exposed, that are willing to commit murder, that have blackened the good name of our noble profession, and given themselves over to the eternal infamy and abhorrence of all mankind, have but themselves and their sordid motives to thank for the present exposure, and its possible consequences.

In expressing themselves as willing to commit this crime, or to recommend others that will, men show themselves possessed of consciences too near in kind to those of brutes and beasts to be reached by moral agencies. What remorse may come to them will be born of the fact of exposure—the sorrow of the thief that he is caught.

It is not our purpose, nor is it proper for us to be judge and jury in regard to these cases. The State of Illinois has laws, and instruments for their execution; it has a State Board of Health; and there is a large medical society in this city, to which some of the offenders belong. Men that will commit abortion are unfit for citizenship in any civilized state, are too far lost to moral responsibility for the profession of medicine, and too degraded to be the associates of honest men. Then let the police, the courts, the State Board of Health, and the medical societies take the record furnished by the *Times* and deliberately proceed with the execution of the laws of the State and the ethics of the profession with strict impartiality and unswerving justice. To leave the matter where it is, a simple newspaper exposure, will result in its horrors being forgotten in six months, while the black list will remain as a convenient directory for those who may be in want of abortionists in the future.

Will honest men endure the fellowship of lawless, abhorrent and infamous men that traffic for personal gain in the weakness and shame of poor erring humanity?

Criminal abortion, the National disgrace, has culminated in the exposure in Chicago. It is to be regretted that the matter was not worked up at the same time in other cities, so as to clear the country of the harpies that foul the medical profession.

After all, we may trace the origin of this matter, in a great measure, to our system of medical education, and to the attitude of the public and the newspapers in regard to higher medical education and State regulation of medical education and practice. We do not claim that all highly educated men are moral, nor that badly educated men are always immoral. But if the public and the newspapers will cease their interference with plans and projects for higher medical education, and for more stringent regulation of the practice of medicine, the medical profession will be improved, both for its own good and for that of the public.

EDITORIAL NOTES.

FOOD ADULTERATION IN MINNESOTA.—The report of Dr. Drew, of Minneapolis, Chemist to the State Dairy Commission, just made public, shows that the adulteration of food in Minnesota has assumed alarming proportions. In his report Dr. Drew says that no evidence of adulteration was discovered in the samples of flour and bread examined. In baker's chemicals nearly all were adulterated. Of 29 samples of cream of tartar examined 17 were adulterated, and bicarbonate of soda was only half pure. In the baking powders commonly used, ingredients were found which were likely to lead to the impairment of health. The alum powders are declared to be cheaply made and contain large proportions of flour or starch. Twenty samples of teas were examined and three found to be adulterated. Only 3 out of 7 samples of ground coffee were found pure. Of 81 samples of spices 64 were adulterated and 17 were pure. Out of 34 samples of "pure cider vinegar" 9 were found pure and 2 adulterated with water. Twenty-three vinegars, not cider, were found to be adulterated with water. Of 10 samples of cider all proved

to be apple cider adulterated with glucose sirup, citric or tartaric acid, or of a wholly fictitious character. All but one contained acids prejudicial to health. Adulterations were found in sugars, confectionery sirups, lard, honey, and in almost every article examined.

EXECUTION BY ELECTRICITY.—A committee of the New York Medico-Legal Society has made a report on the best method to be followed under the law for execution by electricity, which goes into effect in that State on January 1. It will be remembered that some unfavorable criticism was given upon the proposed method by a number of physicians in New York. The reasons given against execution by electricity were two, viz.: that it was not certain enough; and that if successful it was too humane, as it defeated the ends of justice by robbing the criminal's demise of all its terrors. No answer is needed to the latter reason, and the above-mentioned committee's report embodies directions which, if followed out, will make death as certain as it is swift. A stout table, covered with rubber cloth, is provided, upon which the prisoner is firmly bound. One electrode is inserted in the table in such a manner that it will impinge upon the spinal column between the shoulders; the other electrode is pressed to the back of the prisoner's head, the hair being cut close and moistened with warm water. A dynamo generating an electro-motive force of at least 3,000 volts is recommended, the current to pass alternately for thirty seconds. It is anticipated that these specifications will meet the approval of the State authorities.

POISONING FROM FALSE-TEETH PLATES.—A case of supposed poisoning from denture plates is reported from New Haven. The sufferer recently bought a set of false teeth with a rubber plate. He had worn them but a short time when his tongue began to swell. This continued until it was much beyond the natural size. His eyelids also swelled up so that he was blind for a time, and other parts of the body have been similarly affected.

DEATH AFTER A LONG FAST.—A man in Kansas City died on Dec. 16, after a fast that began on Nov. 1, in which he took only a little water occasionally. He was a sufferer from renal disease, and after Nov. 1, could not be induced to take food

ASSOCIATION ITEMS.

CATALOGUE OF ADDITIONS TO THE
LIBRARY OF THE AMERICAN MED-
ICAL ASSOCIATION,BY DONATIONS, EXCHANGES AND SUBSCRIP-
TION, FROM MAY 1, 1886, TO MAY
1, 1888.Abbott, H. C. de S., *Yucca Angustifolia*;
Fouquieria Splendens.Adams, S. S., *Dangers of Kissing*; *Systematic
Training of Nursery Maids*.Allbutt, T. C., *Visceral Neuroses*.Andrews, E., *Incision, Digital Exploration
and Drainage of Lumbar Abscesses*; *Rectal and
Anal Surgery*.Arlt, F. v., *Diseases of the Eye*.Attfield, J., *Chemistry, General, Medical and
Pharmaceutical*.Army Engineer Department (U. S.), *Annual
Report of the Chief of Engineers for 1885*.Army Medical Department (U. S.), *Index Cata-
logue of the Library of the Surgeon-General's
office*, Vols. vii, viii.Baker, H. B., *Typhoid Fever and Low Water
in Wells*.Baker, L. W., *Mental Epilepsy*.Barker, F., *Influence of Maternal Impressions
on the Fœtus*.Beale, L. S., *Urinary and Renal Derangements*.Beard, G. M., *Sexual Neurasthenia*.Bell, R., *The "Medicine Man."*Bettman, B., *Recurrent Hæmorrhage into the
Anterior Chamber*; *Ocular Troubles of Nasal
Origin*; *a Case of Purulent Inflammation of the
Middle Ear with Brain Complications*.Bishop, S. S., *Diseases of the Middle Ear*;
Statistical Report of 5,700 Cases of Ear Diseases;
Hay Fever, (Prize Essay); *Operations for Mas-
toid Disease*; *Treatment of Chronic Suppurative
Otitis Media*; *Operations on the Drumheads for
Impaired Hearing*.Boyland, G. H., *Buffalo Lithia Water in the
Treatment of Diseases of the Nervous System*.Brewer, G. E., *Modern Treatment of Urethritis*.Bulkley, L. D., *Asthma*; *"Dermatitis Herpeti-
formis."*Burnett, S. M., *The Meter Lens*; *The Dioptry
Again*; *Remarks on Cataract Extraction*.Busey, S. C., *Maternal Impressions*; *Some
Rare Clinical Observations in Obstetric Practice*;
*Persistent Vomiting during Labor Relieved by
Anæsthesia*; *Cystocolpocele Complicating Preg-
nancy and Labor*.Byford, W. H., *Diseases of Women*.Chazarain et Ch. Dègle., *Les Courants de la
Polarité dans l'aimant et dans le Corps Humain*.Cheatham, W., *Suppuration de l'oreille moy-
enne*.Churchill, F., *Face and Foot Deformities*.Clark, C. A., *Handbook for the Instruction of
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on Access to Benign Intra-laryngeal Neoplasms
through external incisions*; *Sore Throat*; *The
Throat and its Diseases*; *A Case of Paralysis of
the Left Vocal Band in Extreme Abduction,
following an Incised Wound of the Neck*;
*Galvano-Cautic Method in Nose, Pharynx and
Larynx*; *A Case of Primary Tuberculosis of the
Larynx*; *Hyperdistension of the Air-Cells as a
Therapeutic Measure*; *A Case of Prolapse of the
Laryngeal Sac*; *Apsithyria*; *Fetid Coryza*; *On
the Elements of Prognosis and of Therapeusis
in Tuberculosis of the Larynx*.Cook, G. W., *Is Dentition a Cause of Disease?*Cook, W. C., *The Relation of Health Officers,
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The usual exchanges, including foreign and Domestic Transactions, Hospital Reports and College Announcements have been received, but are omitted for want of space.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, November 28, 1888.

THE PRESIDENT, J. SOLIS-COHEN, M.D.,
IN THE CHAIR.

(Concluded from page 893.)

DR. WILLIAM HUNT read a paper on

DIABETIC GANGRENE.

DR. THOMAS G. MORTON, in opening the discussion, said: Thirteen cases of diabetic gangrene have come under my observation, generally in consultation. In all instances the disease involved some part of the lower extremity, generally originating in one or more of the toes, or about the dorsum of the foot. Many years ago I witnessed a needle operation for cataract in a young girl who was known to be markedly diabetic; sloughing and gangrene of the orbital contents resulted, and death by coma occurred on the third day. With some few exceptions, the patients I have seen with gangrene in the course of diabetes, have been in good circumstances. I refer to this because it has been suggested that this disease more frequently occurs among those who are surrounded by the comforts and luxuries of life, and not among the poor. An inquiry recently made of the superintendents of our State hospitals for the insane shows that although more than twenty thousand patients belonging to the indigent class have been under the care of the present medical officers of these hospitals, there has not, it seems, been a single case of diabetic gangrene in the institutions at Harrisburg, Dixmont, Danville, Norristown, or Warren. Gangrene in diabetes, in the cases I have seen, has generally started in a local inflammation, resulting from some very trivial cause; on several occasions I have known it to follow the operation of cutting a corn. The occurrence of gangrene in diabetes seems to be a certain indication of great nervous exhaustion, and of a general condition most critical. Although I have observed gangrene as a result of diabetic condition in parts of the body other than the extremities, notably diabetic carbuncular disease, yet gangrene appears more often in the toes and feet, where there is but a moderate amount of cellular tissue, and where the circulation in such cases is apt to be feeble.

The surgical treatment of this form of gangrene can generally be but palliative, most of the

cases I have seen have been promptly fatal. The ordinary principles of surgical treatment should be observed; all tension of parts ought to be relieved by deep, free incisions, which, by relaxing and draining the tissues, permit a better circulation; indeed, I have often arrested the rapid march of gangrene by such treatment. When a line of demarcation forms, which may occasionally happen, the question of amputation may arise. Occasionally the gangrene of diabetes is associated with most excruciating pain, not only in the affected limb, but apparently in the gangrenous parts. I have had two such cases, both females, and in each I performed nerve section, with partial relief in one, and with complete success in the other. In the first, I sectioned the posterior tibial, in the other the sciatic. The latter case I saw in consultation with the late Dr. L. M. Service, of Belmont, near the Falls of Schuylkill; the patient was 70 years of age, a large portion of the foot was already gangrenous, the pain in the foot and leg as far as the knee was excessive. I sectioned the sciatic in the middle of the thigh; the gangrene, which was not apparently hastened or influenced by the operation, very slowly extended for some weeks, until a point about four inches above the ankle was reached, where a line of demarcation formed. Subsequently, Dr. Service, Jr., removed all the gangrenous parts without encroaching upon the living tissues. The patient improved, was able to move about her room with comfort, and with entire freedom from pain; eight months afterward she died from an attack of acute dysentery.

DR. JOHN ASHURST, JR.: Of course, we have been familiar for years with the tendency of diabetics to suffer from gangrenous affections, such as carbuncle and, though not so characteristic, furuncle; and we have also known that intracranial injuries may give rise to diabetes, or rather to glycosuria. Verneuil considers the question of sugar in the urine from irritation of the floor of the fourth ventricle, and shows that it may be a temporary condition, the sugar disappearing as recovery from the injury takes place, and without leaving permanent results.

In many cases of diabetic gangrene, as Dr. Hunt points out, the quantity of sugar in the urine at different periods varies; it may, in fact, be absent at times, and thus even careful examination of the urine during such intervals may fail to reveal the condition. I have but one recorded instance of diabetic gangrene in my personal experience. The patient was a man of middle age, sent to the hospital with strangulated hernia of some four or five days' duration. The attending physician informed us that the man had long been a diabetic. Operation was deemed imperative, and was undertaken. There was but a small patch of gangrene in the bowel, which was left in the wound after relieving the constrict-

tion, so as to allow the formation of an artificial anus. Next day not only the bowel but the edges of the wound and the surrounding tissues were gangrenous, and death rapidly ensued. It was a case, then, of rapid moist gangrene, following a comparatively small incision. I have seen other cases, which I believe were instances of diabetic gangrene, though this was not demonstrated by an examination of the urine, that bear out Dr. Morton's statement of the liability for this condition to be precipitated by slight injuries, such as the rubbing of a boot or cutting a corn. The gangrene is moist rather than dry, which may be a valuable factor in diagnosis. Whenever we see spontaneous gangrene of the moist variety, it should at least excite the suspicion of diabetes.

There are, however, other influences which predispose to spontaneous gangrene, the most common, perhaps, being alcoholism. Verneuil refers to this fact, and says that in what he calls "alcohol-diabetes" gangrene is particularly apt to occur, as there are then two predisposing causes acting at the same time. Another cause of gangrene after amputations and other severe operation, as surgeons are aware, is the presence of certain forms of Bright's disease, the granular kidney especially. In these cases diabetes may sometimes co-exist, and the presence of sugar fail to be recognized, simply because it is not looked for.

As to the treatment of diabetic gangrene, locally, the less done, as a rule, the better. I would go further than Dr. Morton, and would wait not merely for the line of demarcation but for that of separation, which may appear some days, or even weeks, later than the former, before proceeding to amputate. In the majority of cases of spontaneous gangrene, diabetic or not, it is the better practice to trim away dead parts with forceps and scissors, rather than to attempt a radical operation. I have seen, after amputation, rapid return of the gangrene, spreading extensively and causing death. Constitutionally, it is a suggestive fact that the one remedy of greatest value in spontaneous gangrene of any kind is a remedy which has obtained a deserved reputation in the management of diabetes, *i.e.*, opium. Opium in doses of 1 grain, or $1\frac{1}{2}$ grains, night and morning, or larger doses if needed, will often show its good effect in tending to arrest the gangrene in a short time. In many cases of spreading ulceration opium is also of value. For the treatment of diabetic gangrene then, opium internally and the less heroic treatment of the affected part seem to me to offer the best prospect.

DR. JAMES TYSON: Notwithstanding the exhibit made in the exhaustive paper of Dr. Hunt, I cannot but think that diabetic gangrene is a rare disease. Taking my own experience, re-

ferred to by Dr. Hunt, of fifty-five recorded cases in private practice since 1884, and probably at least twenty-five more prior to that date not so accurately recorded, and realizing, as I always have, its possible occurrence, the fact that not a single case has occurred under my observation is a significant one. It is to be remembered, of course, that many of these cases passed from my notice before they terminated. Dr. Hunt has asked for a parallel to his case of paralysis, etc. I cannot give an exact parallel, but one sufficiently so to justify an allusion in the same connection. A gentleman of multiplied business and financial interests came under my care for diabetes when he was 52 years old. Three years later there occurred a sudden hemiplegia. Within a few days after the paralysis occurred, the glycosuria disappeared and has not returned, though nearly two years have since elapsed. The percentage of sugar had been at one time as much as 7 per cent., and was constantly 2 or 3 per cent. In regard to the infrequency of diabetes among the poor no better proof could be given than the fact that in the Philadelphia Hospital, where more than a thousand patients are present at one time, it will often be impossible for weeks to get a case for lecture.

Dr. Morton has alluded to the extreme pain in diabetic gangrene. I have observed the same thing in gangrene associated with granular kidney. I scarcely think it should be regarded as peculiar to the gangrene of diabetes.

DR. JAMES DARRACH: I have seen but one case of gangrene associated with diabetes, the one noted by Dr. Hunt in his admirable and exhaustive paper delivered to the Society this evening. Two others of the legs and two of internal gangrene have also come under my notice in my practice. Those of the legs were in women over 70 years of age, and while I cannot recollect about the condition of the urine in these cases, from my custom of examining the urine in old people for sugar, it having been stated that it was not an unusual thing to find it in the urine of the aged, I doubt the probability of sugar escaping my notice. Dr. Hunt has mentioned that diabetes is a disease of the well-to-do, and referred to the rarity of the disease in hospital patients and among the poor. This would appear to be corroborated by the statement of Dr. Jordas, who writes that in an aggregate of 22,735 admissions into, I think, four hospitals in Lisbon, there was not one case of diabetes, and of 5,700 deaths, in 1862, four only were from this cause. Perhaps climate may, in a measure, account for this small proportion of diabetes, the inhabitants of southern countries being considered by some writers not so liable to this disease; and I might add that, as some mal-condition of the nervous system holds a prominent position in the etiology of diabetes, we might find an explanation in the fact that the inhabitants of

the sunny South are not exposed to the strain upon that part of their organization, as are those who live in countries where the brain is taxed to the utmost.

Dr. Hunt has spoken of the more palpable and well-recognized forms of gangrene. Dr. Wm. H. Dickinson has reported that in the autopsies of five cases of diabetes he has found peculiar morbid changes in the cerebro-spinal system, consisting in dilatation of the arteries and a degeneration of the nervous matter at certain points external to them, occasioning destruction and excavation of the tissue around the vessel. Kaposi describes a peculiar form of inflammatory gangrene of the skin, which I suggest might be owing—as has been described as the pathological condition in shingles—to necrosis of the terminal nerve filaments. I mention these as a probable addition to gangrenous affections in diabetes, which I believe Dr. Hunt does not refer to in his paper, and would suggest that the nervous system should be examined more than has been done in autopsies of this disease. I would inquire of Dr. Cohen whether he included in his statement cases with small amounts of sugar, and whether the sugar was established by the cupric oxide test alone. I feel interested, as from my own examinations I have been led to doubt the existence of this element in normal urine. The existence of sugar has been supposed from the reduction of the oxide of copper. This reaction is accounted for by the uric acid and kreatinin. I would like to ask Dr. Tyson how far his examinations sustain this view.

DR. W. OSLER: I think that Dr. Hunt has underrated the proportion of cases of diabetes that die with pulmonary complications. In my own experience of six autopsies there were three—two of consumption and one of gangrene. Friedrichs, in his important monograph, which contains a study of 400 cases, states that nearly one-half of all diabetics die of lung disease. There are three forms: The most common is a rapidly fatal lobar pneumonia, very liable to terminate in gangrene. Second is a broncho-pneumonia, which is still more liable to be complicated with gangrene. Thirdly, and most commonly, there is a genuine consumption, which is tuberculous, as demonstrated by the presence of the bacillus.

DR. NANCREDE: I would like to add another case to the list, which I had supposed was one of those referred to by Dr. Neilson, but it appears not; it was one of moist gangrene with large amounts of sugar in the urine, where the disease started in the fourth toe. In the other case, which Dr. Neilson mentioned to Dr. Hunt, I amputated the thigh high up for moist gangrene *not* due to diabetes. It illustrates the futility of amputating anywhere near the site of disease, for the artery was thrombosed to the groin. Unless the operation be done above the knee for gangrene of the

foot, we are almost certain to have recurrence in the wound with rapid spread of the disease and death. The practical outcome of this discussion should be to lay down a rule not to undertake any serious operation unless the urine has been tested for sugar, as well as for albumin. Since I assisted at an amputation of the breast in the practice of a friend, in which the urine had been found free from albumin prior to operation, but after the amputation the urine was found to be loaded with sugar, I have pursued this rule. Perhaps if the urinary examination included testing for sugar, as well as albumin, there would be fewer unexpectedly fatal terminations to operations and more cases of diabetes recognized.

DR. J. WILLIAM WHITE: If Dr. Hunt had been able to elicit from his correspondents the facts as to the coexistence or absence of certain other conditions likely to give rise to gangrene, we could better estimate the relative etiological importance of diabetes in these cases. Thus, in one of Dr. Agnew's cases which I had the opportunity of seeing, and upon whom I performed a knee-joint amputation, the subject was a man of 52 years, with chronic alcoholism and with marked atheromatous changes in the vessels. In this case we had, therefore, two conditions, either of which was competent to produce gangrene without the concurrent diabetes. Dr. Hunt's admirable and otherwise exhaustive paper would, perhaps, have been more conclusive had it been possible to include these points.

DR. S. SOLIS-COHEN: Dr. Nancrede's remarks suggest an explanation of the comparative meagreness of hospital records of diabetes, and of its supposed rarity among the poorer classes. Urinary analysis is not as general or as thorough as it ought to be. In the medical clinic of Jefferson Medical College Hospital, where it is the invariable rule to examine the urine of every patient, no matter how trifling the complaint, not a year passes that one or more cases of unsuspected diabetes, or at least glycosuria, are not discovered. Further, I would suggest that out-patient clinics or dispensaries, and not hospital wards, are the places to search for public records of diabetics of the poorer class. The Jefferson clinic has, I suppose, from five to ten or more cases of diabetes annually, in a service of about 4,000 new cases. At the Philadelphia Polyclinic, during nine months of this year, between 300 and 400 patients have been treated in the medical department, of whom three have been cases of diabetes. This large proportion is to be accounted for by the greater number of special clinics in the same building, reducing the attendance at the general clinic. Taking the entire non-surgical service of the institution, the proportion of diabetics would be reduced somewhat below that of the Jefferson clinic. Of course, in institutions like these, consultation cases increase the average of rare diseases of all kinds

above that of ordinary dispensaries. Still, considering the aggregate number of diabetics at these two clinics, of which I have personal knowledge, and remembering that urinary examinations are not as thorough as they should be in private practice among the poor, and that diabetics, as a rule, are walking cases until near the last; and, therefore, not to be looked for in hospital wards, I must doubt the force of Dr. Hunt's social distinction.

Dr. Cohen replied to Dr. Darrach that dependence was never placed upon a single test, and there was little probability that uric acid and kreatinine had been mistaken for sugar. One disadvantage of dispensary practice in these chronic cases was the inability to keep patients under observation for more than a short time. They wandered elsewhere, and might possibly be doubly or trebly reported.

DR. THOMAS S. K. MORTON: I should like to make more special point of what the practice of antiseptics enables the surgeon to accomplish in dealing not only with diabetes, but with all sorts and conditions of depraved system when upon them have been engrafted complications which, with modern methods of wound treatment, are at least entitled to have some attempt made for their relief. Under this heading would be included diabetes, Bright's disease, the graver infectious and contagious diseases, ataxia, and all other serious nutritional alterations dependent upon nerve or other change. Now the dangers principally to be dreaded in undertaking operations in persons subject to such diseases are those of *infection*. Little need be feared until this dire calamity has occurred. The most innocent forms of senile or other gangrene may at any time become so infected and change their nature to one of greatest malignancy. On the other hand, even large areas of necrotic tissue will not putrefy nor infect the system until bacterial decomposition takes place in them. I am convinced that infected gangrene existing without skin lesion usually has derived that complication from noxious bacteria lying deep in the various appendages of the skin. Hence the evident advisability of protecting a part about to become sphacelated by antiseptic covering; preferably by a carbolic or combined carbolic and sublimate dressing, for in such cases carbolic acid is a necessary constituent of the dressing that the fat and other skin glands may be deeply penetrated and disinfected by its influence—a property not possessed by sublimate and other disinfectants.

When infection takes place in a case of one of the above-mentioned diseases, the already depraved tissues are powerless to resist the onslaughts of bacteria, and frightful pillage and destruction are the result. Especially is the system unable to cope with the attacks of bacteria when diabetes is present, for then is provided in addi-

tion to the other favorite pabula of bacteria, glucose, which, in tissue solution, affords a most capital medium for the culture and dissemination of poisonous and tissue-destroying microorganisms.

We must then have ever in mind, that in dealing with surgical complications of any of the diseases which have been quoted, but more especially in the case of diabetes, that our object should be:

1. To prevent infection of a part about to become gangrenous, by instituting disinfection and subsequent protection; and, above and beyond all, never to apply a poultice.
2. Only to interfere surgically when absolutely necessary.
3. To operate only with thorough and powerful antiseptics—asepsis will never answer in these cases.
4. To relieve tension absolutely, and to eradicate as much of the diseased tissue as possible, and to disinfect thoroughly and render sterile all that cannot be so treated; for unless this be accomplished, a favorable result, or arrest of the destructive process, cannot be expected.
5. In suturing or dressing, to make no great traction upon any portion of the wound or its surroundings, and to provide most liberally for drainage.
6. To dress the wound in such a way as to prohibit subsequent infection, and to redress it upon the slightest indication.
7. To remember that non-union and non-healing will probably result, but that we may be bold in doing what seems indicated, for local harm cannot come save by infection.

DR. DE FOREST WILLARD: I cannot agree with the suggestion to make incisions to relieve the tension, I consider any interference injudicious in slow gangrene. The only safe plan is, to wait for the line of demarcation. Some months since, a man almost moribund came to the hospital with gangrene of the leg, and with crepitation extending as high as the hip-joint. Under excessive stimulation, twenty-four ounces of whiskey daily, he rallied, and I cut away the parts with scissors, through the knee-joint. A quick operation, or one near the part, would have caused death. Recovery has taken place, though a spot is now making its appearance on the toe of the remaining leg.

DR. TYSON: I am very glad to hear Dr. Darrach's remarks. I do not believe that sugar is ever present in normal urine. The copper-reducing substance in such supposed cases is most frequently uric acid.

DR. ASHHURST: The pain of diabetic gangrene so frequently alluded to this evening is, I think, rather a feature of the local process than of constitutional cause. Slow gangrene, especially if being superficial, it involves a greater extent of nerve distribution, is more painful than rapid or deep-seated gangrene, where the nerves escape to a great extent, or are quickly destroyed. The recommendation to amputate at a very high point in cases of spontaneous gangrene, is by no means

new, having been strongly urged many years ago by James, of Exeter; it has been recently revived by Mr. Holmes and other surgeons, but the general consensus of surgical opinion is against it. In traumatic gangrene, of course, the case is different. There the proper course is, I think, to amputate as soon as possible, at a point well above the limit of the gangrenous portion.

MISCELLANEOUS.

GLANDERS AS AN INFECTIOUS DISEASE.—The following letter, upon the subject of glanders as an infectious disease, and the propriety of killing animals suffering from said disease or farcy, as soon as recognized, is published for the information and guidance of the Army:

BALTIMORE, JULY 24, 1888.

To the Quartermaster-General U. S. Army, Washington, D. C.

General:—In reply to your communication of July 16, I have the honor to submit the following statements and opinions:

Glanders is an infectious disease in which the infectious agent has been demonstrated to be a living micro-organism—a bacillus.

The bacillus of glanders was discovered by the German bacteriologists Löffler and Shutz, in 1882, and the discovery has since been confirmed by several other competent bacteriologists. It is found in the nasal secretions and ulcers of the mucous membrane, in the "farcy-buds" pustules and enlarged lymphatic glands of infected animals, and it is probable that it is also sometimes present in the urine.

It is a slender rod, somewhat similar in appearance to the well-known tubercle bacillus, but more uniform in size and somewhat broader. In preparations stained with fuchsin or with Löffler's solution of methylene blue, clear spaces are often seen in the rods which have been thought by some authors to be spores, but this is doubtful, as Löffler has found that no development occurs after the bacilli have been exposed to a temperature of 55° C. (131° F.) for ten minutes.

Pure cultures of this bacillus have been shown to produce typical glanders in horses and asses, and it is recognized by bacteriologists as the cause of the disease. The disease may also be transmitted by inoculation to guinea-pigs and to field-mice, which animals (preferably guinea-pigs) may be used as a test of the infectious character of the nasal secretions of a suspected animal.

Exact experiments have shown that the bacillus of glanders is killed by exposure for five minutes to a 5 per cent. solution of carbolic acid, or by a 1 to 5,000 solution of corrosive sublimate.

In practice it will be best to rely upon boiling water for the disinfection of all articles which can be immersed in it without injury—rope halters, blankets, curry-combs, bits, etc. To keep on the safe side, half an hour may be fixed as the standard time during which articles to be disinfected shall be immersed in boiling water, or exposed to steam at a temperature of 212° F.

Articles of leather should be repeatedly washed with a 5 per cent. solution of carbolic acid or a 1 to 1,000 solution of corrosive sublimate; or immersed in such a solution for at least one hour. If the solution can be used hot, say 180° F., without injury to the material, this will be desirable.

QUANTITATIVE ESTIMATION OF ALBUMIN IN THE URINE.—The possibility of estimating the amount of albumen in fluid by the difference in specific gravity before and after the coagulation of the albumin has been exper-

imentally investigated by Huppert and Zahor, and the last-named has attempted to apply the method to the urine. He recommends that the proportion of acetic acid required to coagulate the whole of the albumin be ascertained by a preliminary experiment. A specimen of the urine after filtration is then treated with the necessary amount of acetic acid and divided into two parts. One part is put into a bottle, which must be stoppered with an India-rubber cork, and kept in a water-bath at a temperature of 100° C. for ten minutes or a quarter of an hour. The urine is then cooled and filtered, care being taken to prevent loss by evaporation during this process. The filtrate and the portion of acidified urine originally reserved are then brought to the same temperature, in a water-bath, and the specific gravity of both very carefully taken. The difference between the two figures thus obtained, multiplied by 400, the average coefficient ascertained by experiment, gives the amount of albumin in grams, in 100 cubic centimetres. The average error is stated to be plus or minus 0.0175 gram, but may amount to 0.05.—*British Medical Journal*.

THE CASE OF DRS. MCCOY AND WILDMAN.—In the case of the revocation of the certificate of Dr. Henry G. Wildman, of Chicago, by the State Board of Health, and the action of the Governor in overruling the same, it is but just to say that in the McCoy case, upon which the decision of the Supreme Court was based,—holding that McCoy's certificate was not regularly revoked—McCoy virtually swore the Board out of court, swearing that he had not received notice to appear before the Board and had had no notice of the revocation of his certificate. At the time of the revocation of McCoy's certificate he was advertising himself to be at St. Louis, Belleville and Alton. The Board served notice upon a person who represented himself as McCoy, yet in court McCoy swore that he had never been in Alton. In a similar case against McCoy now pending in the Supreme Court the Board presented two witnesses, one from Belleville and one from Alton, who swore to having served notice upon McCoy to appear before the Board, also notice of revocation of his certificate. McCoy appeared in the first trial brought against him, but not in the second—he being rarely in Chicago. The action of the Governor is simply based on the decision of the Supreme Court in the first case against McCoy, and on technicalities. The Board will not let the matter rest where it is now.

GAME FOR INVALIDS.—After being properly prepared, boil a fine young bird until it is three parts cooked; then remove the skin, pick all the flesh from the bones, and pound it in a mortar, with a little of the liquid in which it was boiled, three tablespoonfuls of finely sifted bread crumbs, a teaspoonful of grated lemon rind, a sufficient seasoning of salt, and a grating of nutmeg. When pounded to a perfectly smooth paste, put the mixture into a saucepan with a little more of the liquid, and let it simmer gently for ten minutes. When finished, the panada should be slightly thicker than good cream. It will keep quite fresh and sweet for three or four days, and can be heated, a few spoonfuls at a time, and served poured over a slice of nice, crisp, hot toast, or in a very tiny dish with sippets of hot toast inserted round about. Nothing more quickly destroys the capricious appetite of an invalid than having a large dish of anything, no matter how dainty, set before them; they require to eat often, but only a very little at a time.—*St. James Gazette*.

HEALTH OF PITTSBURGH.—The report for November shows the number of deaths to have been 316, a rate of 16.5 per 1,000 inhabitants annually. Infectious diseases numbered 157, as follows: Forty-one cases and 21 deaths of diphtheria; scarlet fever, 57 cases and 5 deaths; typhoid fever, 59 cases and 19 deaths. In addition, consumption caused 25 deaths; diseases of the nervous system, 31; circulatory, 17; respiratory, 62; digestive, 13; violent causes, 33.

BROOKLYN MEDICAL AID SOCIETY.—James D. Conklin, manager of the Brooklyn Medical Aid Society has presented to the organization his first semi-annual report. The society was at first opposed by the Kings County Medical Society, but it afterward approved of its methods as a relief to people of the middle and poorer class, who, by this means, were enabled to secure medical attendance and prescriptions without the cost that usually attends such services. The society now has twenty physicians and sixty-six druggists who supply its subscribers free with attendance and medicine. The subscribers pay on the insurance plan: From 16 to 70 years at from 2 cents to 18 cents a week, rates being made for families. The report contains the following interesting facts in connection with this new society. The books of the Society were opened April 16, and 2,188 certificates of subscription have been granted since then, 619 being between 16 and 30 years, 125 between 30 and 60 years, 987 between 1 and 10 years, and 459 between 10 and 16 years. Certificate holders have made 867 calls on the society's physicians and the physicians have made over 900 calls on patients. There have been 978 prescriptions given to members and dispensed by the druggists, all of which service and medicine has been furnished to the certificate holders free of charge, in accordance with the rules of the society. Manager Conklin requests that the medical staff be increased to twenty-five and that the number of druggists be increased to 100, to meet the growing demands of the society. Out of the total number of certificate holders, only six have died since the formation of this society.

OPERATION FOR TORTICOLLIS.—Dr. Levrat has devised a new method of treating torticollis. Instead of operating subcutaneously, he cuts down upon the sternal tendon of the sterno-mastoid muscle, effected by a longitudinal incision 2 centimetres long. He clears the tendon with the forceps, passes a grooved director under it, and divides it. He then divides any tissue that may bind down the muscles at that spot, sutures the wound, and dresses it antiseptically with iodoform and gauze. Over the dressings he places the following: The head being enveloped in cotton wool, a silicated bandage is wound horizontally around it at the level of the forehead, and a similar bandage vertically over the crown and under the jaw. Where these bandages meet at the level of the mastoid process on the sound side, a small hook, with the concavity looking upwards, is inserted. Another silicated bandage is wound round the body below the axilla, and through the thickness of the bandage a hook is inserted in the middle line in front, having its concavity looking downwards. When the bandages have dried, the two hooks are connected by a band of India-rubber, which assists the sterno-mastoid of the sound side to keep up a continuous traction and so correct the deformity. This apparatus and the dressings are left untouched for fifteen days, and the success of the operation is said to be assured.—*The Lancet*.

DANGER IN THE POSTAGE STAMP.—The *Sanitary News* calls attention to the fact that a postage stamp may in various ways convey contagion. One of the simplest and most plausible is that in which a postage stamp, partially attached to a letter to pay return postage, is sent by a person infected with some disease to another person. The disease is transferred in the first place to the adhesive stamp through the saliva, and in being attached to the letter by the receiver the poison may be transmitted to him in turn through the saliva. Another cause may be the infection of the stamp with disease germs. The stamp, having been exposed in a room where a diseased person lies, may become slightly moistened and thus retain the germ. That this is true can be proved very simply by a microscopical examination. We often see a person holding change for a moment in the mouth, probably not knowing that investigation has shown that disease germs can be carried by money. If one could see through what

hands the money has passed they would hesitate before using such a third hand. Silver money is as bad as paper money, but while many would hesitate to hold a dirty bank note in their mouth, they think that a silver piece, because bright, is apparently clean.

HEALTH OF CHICAGO.—November's mortality reports show that 1,061 people died in Chicago during the month; of these 298 died of zymotic diseases. Diphtheria caused 105 deaths during the month. Typhoid fever caused the death of 40 persons, and scarlet fever of 14. One hundred and seventy-nine persons died during November from constitutional diseases, 111 of these deaths being caused by consumption. From local diseases there were 445 deaths, 77 being from infantile convulsions. Diseases of development caused 65 deaths, and 73 were the result of violence, 18 being killed by trains.

THE RED CROSS SOCIETY OF FRANCE.—This Society, which rendered invaluable services during the Franco-German war, dispenses large sums every year for the relief of old and disabled soldiers and their widows and orphans. Last year it distributed to 1,760 soldiers who had been wounded in war, and 327 dependent relatives, a sum of 47,506 francs, as well as numerous artificial limbs and surgical appliances. The perfection of different types of ambulance wagons is a subject to which the Society is giving much attention.—*British Medical Journal*.

N. W. OHIO MEDICAL ASSOCIATION.—The thirty-second semi-annual meeting of the Northwestern Ohio Medical Association was held in Toledo on December 13, with a large representation from all over Northwestern Ohio. Dr. C. E. Beardsley, of Ottawa, was elected President for the ensuing year, Dr. F. W. Brayton, of Carey, first Vice-President, Dr. J. A. Duncan, of Toledo, second Vice-President, Dr. Durbin, of Woodville, Secretary, and Dr. Hathaway, of Toledo, Treasurer.

DISTILLERY FED CATTLE.—The health authorities have refused to allow the cattle ordered from the Chicago distilleries to be fed in Lake View.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from December 15, 1888, to December 21, 1888.

Lieut.-Col. Charles T. Alexander, Surgeon, and Capt. Henry S. Kilbourne, Asst. Surgeon, detailed for duty on Army Retiring Board, to meet at Vancouver Bks., W. T., at the call of the President thereof. Par. 22, S. O. 292, A. G. O., Washington, D. C., December 15, 1888.

By direction of the Secretary of War, First Lieut. Nathan S. Jarvis, Asst. Surgeon, is relieved from duty at Ft. Leavenworth, Kan., and will report to commanding officer, Ft. Lewis, Col., for duty. Par. 14, S. O. 290, A. G. O., Washington, December 13, 1888.

Capt. Louis A. La Garde, Asst. Surgeon, is granted leave of absence for one month, with permission to apply for an extension of three months. Par. 15, S. O. 290, A. G. O., Washington, December 13, 1888.

Capt. William E. Hopkins, Asst. Surgeon, is detailed as member of the Army Retiring Board to meet at San Francisco, Cal., vice Major Henry E. Tilton, Surgeon, relieved. Par. 3, S. O. 294, A. G. O., Washington, December 18, 1888.

Capt. William F. Carter, Asst. Surgeon, leave of absence granted in S. O. 116, Dept. of Texas, November 12, 1888, is extended five months, by direction of the Secretary of War. Par. 4, S. O. 292, A. G. O., Washington, December 15, 1888.

Capt. George McCreery, Asst. Surgeon, is granted leave of absence for one month. Par. 4, S. O. 265, Hdqrs. Div. of Atlantic, Governor's Island, N. Y., December 15, 1888.

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Original Articles.

THE MODERN UNIVERSITY SCHOOL—ITS PURPOSES AND METHODS.

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CHICAGO.

The earliest American medical schools were established in connection with institutions of general learning, as would have been expected from the fact that the physicians who founded them had been educated in Great Britain and France, where the medical colleges were, without exception, departments of universities. Only a few of the American schools, however, were established with such a relation, the larger majority being quite independent of any university or college connection, so that in 1877, twenty-five years ago, less than twenty of the sixty-five medical colleges then in existence were connected in any way with institutions of general learning. Subsequent to that date, however, such schools have become much more numerous, and of the one hundred and fifty-eight medical schools at present existing in America, between sixty and seventy are connected with a university or college.

These facts suggest some interesting queries. Why were not all of our medical schools, following the example of those first founded, established in connection with institutions of general learning? What motives have prompted the movement which, starting about 1880, has resulted in the large increase in medical schools so connected? What is the nature of the relationship which exists to-day between the medical schools and the universities with which they are connected? Has this relationship resulted in the largest possible measure of advantage to either the medical school or the university? And finally, what should be the nature of this relationship in order that the best results may be secured?

THE DIFFERENT CONDITIONS IN THE EARLY DAYS.

In answer to the first query it may be noted that there were no universities in America in the broad, European sense until comparatively recent years. Our institutions of higher learning were, as most of them still remain, colleges, devoted to purely academic instruction, in the classics, mathematics and philosophy. Such an institution has nothing in common with the professional school, and there can be little advantage or propriety in any connection between them. Then, too, it was hardly possible to establish the medical school on such a basis as to make it a fit member of a university organization.

The rapidly-growing country demanded physicians in large numbers, trained as best they might be for practical life, but with requirements and the expense of the college course such as not to place it beyond

the reach of all but a few students. Until the middle of the last century the majority of students entered the practice of medicine through an apprenticeship with a preceptor. The chief problem was how to induce these students to spend any time at all in the medical school, and to have exacted high requirements for admission, and a prolonged and expensive course would have been to defeat the very purpose for which the school was established. But a college with such standards, little or no restriction as to preliminary education, graduating after attendance on two, four or five months' sessions of repetitional lecture courses, could not fittingly have been made a department of a true university.

Thus medical colleges came to be established by medical men as independent institutions, sometimes, it is true, with other than the highest motives, but, on the whole, with an honest purpose to meet a real need. In passing judgment on these colleges and their founders due regard must be taken of the conditions which obtained at the time they were organized. In the absence of endowment or financial aid from the state the college had no resources excepting from the fees of students, which were of necessity low. It was imperative that the standards of the school should be such as to insure a sufficient number of students to maintain it on a working basis. For the past twenty-five years there has been no real demand for more medical colleges, and the judgment if not the motives of those who have instituted most of the colleges established within this period may well be questioned, but previous to that time the physicians who established the medical colleges of the old type were, with few exceptions, animated by an honest purpose, and possessed a logical and discriminating judgment in adjusting the standards of education very closely to the needs and conditions of the times. These institutions, sometimes styled commercial, never, so far as I have knowledge, yielded a direct money profit, though the indirect return to the occupants of the clinical chairs was in many cases large. Fortunately, the demand for physicians is no longer such as to compel the maintenance of schools with low standards.

THE TRUE UNIVERSITY.

The true university dates its inception in America from the founding of the Johns Hopkins University, which within a few months has celebrated its twenty-fifth anniversary. From this institution, with its emphatic pronouncement that the extension of knowledge by original investigation must constitute the very essence of the true university, can be directly traced the origin of the university idea in this country. Soon Harvard, Yale, Columbia and Pennsylvania caught the new spirit, and the founding of the Clark University